THE DOCK & HARBOUR AUTHORITY

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Editorial.

The Port of Piraeus.

Owing to its close proximity to Athens, Piraeus is naturally the most noteworthy port in Greece.

Piraeus was first heard of as a harbour in 590 B.C., though in the year 86 B.C. Piraeus was totally destroyed, and it was only in 1834 A.D., when Athens became the capital of Greece, that Piraeus became noteworthy again.

The port at present consists of an outer harbour, central harbour and an inner harbour, but owing to increasing trade, new developments were undertaken and completed in 1930 and further constructions are at present under consideration.

Regarding imports and exports at the Port of Piraeus, the figures show a steady increase since 1923, as the total of imports in that year was 1,413,261 tons, whereas in 1929 it had grown to 2,071,381 tons, and the export figures for 1929 show a total of 381,773 tons, which go to prove that Piraeus is chiefly an import harbour, as exports are only about one-sixth of the imports.

The chief problems which the Greek Government have to face with regard to the Port of Piraeus are:—

1.—The problem of harbour enlargements and improvements;

2.—The problem of operation and organisation.

The first problem, as already pointed out, has received due consideration and new constructional works have been undertaken and future developments are in hand.

Regarding the second problem, only quite recently the harbour was in charge of an ordinary Harbour Master without organisation, and this naturally did not speed up loading or unloading operations, and probably was the cause of a lot of congestion. On May 13th, 1930, the Government, after careful consideration, made a special law for the creation of a Harbour Board, which is to be comprised of 27 members. This Board will not receive any allowance from the Government, and its expenses will have to be covered from the receipts obtained from a special tax imposed on Customs duties and from the operation of the cranes and warehouses which have been completed and which are to be built.

Apparently the whole future of the Port of Piraeus rests with this new Harbour Board and the outcome of their activities will be awaited with great interest by the Greek Government.

The Port of Piraeus forms the supplement for this month's issue and an illustrated article appears on another page.

Annual Meeting of the Dock and Harbour Authorities' Association.

The annual general meeting of the Dock and Harbour Authorities' Association for the year ended 31st December, 1930, was held at the Caxton Hall, Westminster, on Wednesday, 18th February, 1931, when the Annual Report was presented and adopted. The meeting was presided over by Mr. B. L. Nairn.

The Annual Report was submitted by Lord Ritchie, Chairman of the Port of London Authority and Chairman of the Executive Committee of the Association, who said there had been a good many Bills in Parliament which had affected the constituent members of the Association, and the Association had succeeded in getting important amendments, notably in the cases of the Road Transport Bill and the Land Drainage Bill. Concerning the railway Bills, they had not succeeded in getting all that they had wished, but certain amendments had been made which would strengthen the position of the independent dock authorities. One of the most interesting cases the Association had to deal with during the year was the Seaham Harbour Income Tax case, in which the harbour had been assessed for Income Tax on grants made by the Government towards capital works, and on the case being taken to court, the decision was made in favour of the Commissioners of Income Tax. The Association took up the matter and succeeded in getting the decision reversed.

Another matter which proved of great interest during the year was contained in the report of the Royal Commission on Transport, in which the Dock and Harbour Authorities had come out of the inquiry exceedingly well. The Commission had made a recommendation that the Home Office should once again consider the advisability of making a contribution to the dock and harbour authorities towards their police expenses, and this was a matter that had concerned the Association on several occasions in the past, but they had never been successful in representations they had made to the Government, and the recommendation should help them considerably.

Mr. R. E. Herdman, Chairman of the Belfast Harbour Commission was unanimously elected President for the ensuing year, and the following were elected Vice-Presidents:—Lord Ritchie of Dundee; Mr. C. E. McGloughlin (Dublin); Sir William Crundall (Dover); Mr. R. D. Holt (Liverpool); and Mr. W. F. Robertson (Clyde).

The following were appointed to the Executive Committee:—Lt.-Col. T. G. Poole (North-East Coast of Scotland); Mr. David J. Owen (London District and South Coast); Mr. T. A. Peace (Bristol Channel); Mr. J. G. B. Beazley (Liverpool and North-West District); Mr. F. A. Eyre (Manchester Ship Canal); Mr. George W. Service (West Coast of Scotland); Mr. B. L. Nairn (East Coast of Scotland); Mr. M. J. Watkins (Northern Ireland); and Mr. William Hewat (Irish Free State).

Owing to shortage of space, we are unavoidably holding over the full report, but this will be published in our issue for April.

Stanlow Dock.

The directors of the Manchester Ship Canal Company intend to make an early start on the construction of a new oil dock at Stanlow, opposite Ellesmere Port. It is estimated that the dock itself will cost approximately £400,000, and with equipment a further £60,000. The present dock on the Mersey side of the canal, which will be duplicated, has been constructed to accommodate cargoes of petroleum spirit and other dangerous fluids flashing below 73 deg. F., also petroleum, lubricating and other oils. The water is 30-ft. deep. A subway has also been provided with pipes and all other facilities for pumping the oil underneath the Ship Canal into tank installations. The new dock will double the capacity at Stanlow. Manchester Ship Canal has already the finest accommodation for the oil trade in the British Isles, and the extension will make Stanlow the greatest oil port in the country. Already there are 80 tanks capable of holding 270,000 tons or 64,365,152 gallons of oil. There is a berth 600-ft. long at Stanlow lay-by, where general cargo can be loaded or discharged.

Successful Year for Belfast.

The Annual Report for 1930 of the Belfast Harbour Commissioners shows that the port had a very successful year, as with a gross revenue of £318,577 9s. 2d., and a total expenditure of £279,587 17s. 10d. showed a net surplus for the year of £38,989 11s. 4d. Regarding the net register tonnage of vessels which cleared from the port during the year, this showed an increase of 315,934 tons over the previous year with a total of 3,700,418 tons, which was the highest recorded in the history of the port. The tonnage of goods imported and exported was 3,304,419 tons and was a decrease of 57,665 tons on the previous year.

North-East Coast Notes.

Progress with Tyne Development Schemes.

SOME progress has been made recently with two Tyne development schemes. First, the adequate utilisation of Jarrow Slake; and, second, the extension of Newcastle Corporation Quay. The Jarrow plans are ambitious and important, for it means not only the change of a practically useless water space into an area of dock staiths, etc., but also the purchase from the London and North-Eastern Railway of Tyne Dock, closely adjoining, which it is proposed to incorporate with the scheme. In round figures the present plans as they have been outlined represent an outlay of about £2,000,000.

Separate reports on the Jarrow Slake scheme are being prepared by the Docks and Trade Committee and the Finance Committee of the Tyne Improvement Commission. There has never been on the river a scheme of such magnitude as this, so it is being considered in detail with the utmost care. The Finance Committee is dealing with the monetary side of the project, and the Docks and Trade Committee with the question so far as it relates to the facilities and the possibilities of attracting new trade to the Tyne. As a commencement, the general body of Commissioners made a private visit to Tyne Dock on January 17th in the steamer "Sir William Stephenson," and inspected the dock and its staiths, warehouses and general equipment.

Tyne Dock has a water area of 50 acres, and in addition to its importance as an outlet for Durham coal, it has a large general trade. There are four coal shipping staiths, capable of accommodating 16 vessels, and for the rapid discharging of ships there are 55 electric, hydraulic and steam cranes, including one 30-ton electric crane. Fifteen warehouses and sheds provide for general merchandise and the reception of 120,000 quarters of grain. There are 215 acres of land for storing timber and five acres of timber ponds, and the depth of water in the dock ranges from 27-ft. to 35-ft.

Newcastle Quay Extension.

Members of the Newcastle Corporation Trade and Commerce Committee made a tour of inspection of the quay in the early days of February. The plans, which have been prepared by the city engineer, show that the new quay will be between the present shed at the end of No. 24 berth, and the works of Messrs. Langdale's Chemical Manure Co., Ltd., including the Mushroom Quay, and will add 750-ft. to the present one-and-a-half miles long quay. Provision is to be made for a 30-ton travelling crane, with one line of rails, though leaving room for a double line; and a shed 100-ft. wide, or 30-ft. wider than No. 24 shed, and entirely free of columns. Much traffic goes by road nowadays, but if deemed necessary connection could be made with the railway line at the rear. The outstanding feature of the scheme is that it will provide 30-ft. of water at low tide (or 45-ft. at high water), as against 25-ft. at low water at the adjacent berths, and so allow big cargo steamers or even modern battleships to lie alongside.

Alderman Lee, chairman of the Trade and Commerce Committee of the Corporation, responding to a toast at the subsequent luncheon, said he remembered when the quay was a charge of 3d. on the rates, but since then they had spent hundreds of thousands of pounds, and were now proposing to provide further facilities. The trade had responded, however, and hence the quay was a charge of less than a penny on the rates. But did people ever look at the assets that the city received in return for such expenditure They had ample rewa[illegible] in 1½ miles of quay, worth two millions to-day, and on which there was only £400,000 to £500,000 outstanding. Apart from that, there was the interchange of commerce, which meant thousands of pounds spent in wages, and a large saving in transit charges from other ports. Every step they had taken had been a step in a concrete policy.

At a subsequent meeting of the Trade and Commerce Committee tenders for the piling of the foundations and ferro-concrete of the main structure, the principal part of the work, were opened, and the Committee recommended that the contract be awarded to Messrs. R. McAlpine and Sons, London.

Year's Trade on the North-East Coast.

At the last meeting of the local River Commissioners official returns were submitted as to the trade of the ports during 1930. The outstanding figures were:—

COAL AND COKE SHIPMENTS (TONS).

	1930	1929	Dec. per cent.
Tyne ...	17,239,125	19,730,591	12·63
Blyth ...	4,810,735	5,574,807	14·00
Wear ...	4,737,844	5,079,182	6·36

The reductions in figures are: Tyne, 2,491,466 tons; Blyth, 764,072 tons; and Wear, 341,338 tons. It is interesting to note, however, that the coke shipments from the Wear showed an increase of 15 per cent.

At the January meeting of the Tyne Improvement Commission, Alderman T. Sykes, chairman of the Harbour and Ferry Committee, referring to the laid-up vessels in the river, said there was now not an available berth for more.

Mr. M. C. James called attention to the number of concrete tugs and lighters laid up above bridges, and asked if their berths could not be used for larger tonnage. Ships could not be accommodated when they came for repairs for want of berths. The other day a vessel was sent to Falmouth which might have been repaired in the Tyne if there had been a berth. By this means work was lost to the river.

The Chairman (Mr. H. P. Everett) said the concrete craft were lying at small berths which were not suitable for larger vessels. The Commission did not think it advisable to go to the heavy expense of laying down berths for idle ships.

Tyne trade reports showed that in the past year 1,800 vessels took 771,419 tons of coal bunkers, compared with 2,176 vessels, and 853,664 tons in 1929, a decrease of 376 vessels and 82,245 tons. Oil fuel bunkers were on the increase. In the last year 237 vessels took 68,699 tons, compared with 196 vessels and 60,555 tons in the previous year, an increase of 41 vessels and 8,144 tons.

Mr. Francis Priestman, chairman of the Finance Committee, said he thought when the accounts for last year were complete it might be safe to say that, notwithstanding the severe depression in coal exports—the chief source of their revenue—the figures would show gratifying results on the whole.

Wear's Idle Berths.

Mr. J. E. Dawson, chairman of the River Wear Commissioners, speaking at the end of January, said there were 40 empty shipbuilding berths in the river. They had, he hoped, reached the bottom of the depression. So far as the trade of the port was concerned, they were face to face with an outlook which was far from pleasant. Referring to the falling off of shipbuilding on the Wear, the chairman said the deplorable conditions of things was reflected in the engine and boiler shops, as well as in the factories. The freight market was almost bare during 1930, and certainly profitless, and as long as the dearth of payable trading continued there was little hope of any considerable return for the building of ships. He referred to the decrease in the coal and coke shipments, but said he thought they compared favourably with other ports. In regard to the import business, he said the dark spot had been grain. As to the steel trade, it was good to find that in Sunderland they had handled 40 per cent. more of iron-ore than in the previous year. The imports of petroleum, cement, and sundries showed satisfactory increases.

Wear trade returns for 1930 showed that 2,985 vessels of 2,409,164 tons visited the port, a decrease of 236 vessels and 111,164 tons compared with 1929. The principal imports were: Timber, 30,765 loads; props, 75,633 loads; iron and steel, 14,227 tons; grain, 46,340 quarters; esparto, 161,978 tons; wood pulp, 5,562 tons; petroleum in bulk, 86,371 tons; sundries, 58,414 tons.

Tees Dock Dues Reduced.

As a result of negotiations between Middlesbrough Association of the Institute of Chartered Shipbrokers and the London and North-Eastern Railway Company, a reduction of 33⅓ per cent. on dock dues on liners using Middlesbrough Docks which take cargoes of 350 tons or less, has been made, and will operate for six months.

Personalia.

Captain C. W. Walker has been appointed assistant Harbour Master at Blyth.

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Mr. Robert Hyslop, secretary of the South Hetton Coal Co., and Mr. Thomas E. Parrington, agent for the Wearmouth Coal Co., have been elected members of the River Wear Commission to represent the coal owners.

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Mr. Andrew Laing, C.B.E., famous in the engineering world as the designer of the "Mauretania's" turbines, and a director and general manager of the Wallsend Slipway and Engineering Co., Ltd., died in January at his home in Newcastle. He was in his 76th year.

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Mr. W. G. Spence, general manager of Messrs. George Clark, Ltd., of Sunderland, who is retiring from business and from residence in the North-East Coast, was recently presented with a silver salver on which were engraved the signatures of all members of the council and surviving founding members of the North-East Coast Institution of Engineers and Shipbuilders.

Irish Harbour Matters.

Belfast.

Belfast Reduces Dues and Rates.

THE BELFAST HARBOUR COMMISSIONERS at a meeting on the 3rd ult. came to a most important decision, when they agreed unanimously to make substantial reductions in the existing rates on vessels and goods.

In the case of vessels from foreign ports the reduction is 7½ per cent., dating from the 1st January last, and in the case of cross-channel and coastwise vessels the reduction is 15 per cent. also dating from 1st January. The revision of the schedule of rates on goods shows reductions in a large number of cases and slight increases in others, while goods, already reduced under derating, have been left untouched. The alterations came into force on 1st February.

The total relief in harbour dues, as a result of the changes, represents approximately £20,000 per annum, which, in addition to the reductions now in force under the derating scheme, amounting to £7,500 per annum, makes a total in relief of about £27,500 per year.

The proposals were outlined in a report from the Finance Committee of the Board and Mr. R. E. Herdman, D.L., chairman, in referring to the development made an interesting speech. They had, he said, been very conscious of the general depression in trade and industry and were desirous of taking an early opportunity of doing everything in their power towards relieving those who were bearing the brunt of the depression. With that object in view the Board's finances had been kept in constant review, and he was glad to say that notwithstanding the general depression the trade of the port for the past two years had kept up remarkably well. The members of the Board felt that they were now in a position to make some reduction in the harbour charges with a view of somewhat relieving the burden which local business and industry were suffering.

They all hoped that the general depression would soon pass, but in the meantime the members were anxious to do all in their power to help to tide over the period of difficulty. At the same time it must be realised that the Board must always have one dominant consideration in mind, and that was the maintenance of the financial stability of the undertaking for which they were responsible. With that consideration in mind the Finance Committee decided that they were in a position to recommend the reductions indicated in the minutes.

In approaching the question of reducing the rates on goods the committee were of opinion that a small percentage reduction over the whole schedule would prove ineffective in giving any appreciable relief and they thought it wiser therefore to confine such relief as it was possible to give to certain selected articles, thereby utilising the reductions in directions which it was hoped would be of material advantage to local industry. Hence a differentiation had been made between the import and export rates on articles and commodities produced or manufactured locally, so that the scheme of reductions was designed to assist the local industries.

As regards shipping the 15 per cent. reduction on cross-channel and coastwise vessels would include vessels using the port for repairs and fitting out after launch from the ship yards. In addition to the reduction of 7½ per cent. in the dues on foreign vessels there was to be an extension of the regulation under which foreign vessels discharging cargo to an extent not exceeding one-half of their net register tonnage, and not loading any cargo, were granted a remission of half the full rates. This extension meant that such vessels would in future be permitted to load cargo up to 10 per cent. of the net register tonnage without forfeiting their claim to be charged only half dues, but provided only that the cargo was intended for direct shipment to a foreign port.

Conversely foreign vessels loading cargoes to an extent not exceeding half their net register tonnage would be permitted to discharge cargo to an extent not exceeding 10 per cent. of their net register tonnage without incurring the full dues. It was hoped by these means to meet the demand, which had been made, for facilities to assist the direct export abroad of local products.

He thought it would be realised that the Board had made the utmost efforts in their power to grant the fullest relief which they were capable of giving at the moment, and to direct that relief into the channels in which it would prove most effective. It might perhaps be claimed that the Commissioners had been too drastic in the reductions made, and should the income of the port not be maintained in the coming years, that it might become necessary to revise in some instances the rates now reduced. In reply to that he would say that the Commissioners, after full consideration felt it their duty to help, as far as possible, the shipowners and trading community during the present depression throughout the country.

Sir George Clark, Bart., D.L., in moving the adoption of the Finance Committee's minutes said it was always the wish of the Commissioners to do everything possible to increase the trade of the port. At the same time they were desirous that everything should be looked after as economically as possible.

Sir Thos. Dixon, H.M.L., in seconding said the abatements would be good news for the shipowners and merchants of the port.

The Minutes were unanimously adopted.

The Port Traffic.

At the meeting of the Harbour Board on the 2rd ult., Captain McIntyre (Harbour Master), reported that 304 vessels entered the port during the period from the 18th to 31st January as follows:—Coastwise and cross-channel 278, foreign 19 and non-trading 7.

The total tonnage of vessels arriving at the port from the 1st to the 31st January was:

Coastwise and cross-channel 233,844, an increase of 16,456 compared with the same period in 1930.

Foreign 62,850, an increase of 15,336.

Non-trading 6,818, a decrease of 6,811.

Total 303,512, an increase of 24,981.

Annual Report for 1930.

The Statement of Accounts for the year 1930 shows a gross revenue of £318,577 9s. 2d., a total expenditure of £279,587 17s. 10d., and a net surplus of £38,989 11s. 4d.

The net register tonnage of vessels cleared from the port during the year totalled 3,700,418 tons, representing an increase of 315,934 tons on the previous year, and being the highest recorded in the history of the port.

The tonnage of goods imported and exported, viz., 3,304,419 tons, shows a decrease of 57,665 tons as compared with the previous year.

New tonnage constructed in the shipbuilding yards on the Harbour Estate and cleared during the year comprised 24 vessels of 166,409 tons gross and 97,490 tons net register.

The Sinking Funds continue to be maintained in a satisfactory condition and Belfast Harbour Redeemable Consolidated Stock to the extent of £13,460 was purchased out of the Funds and extinguished during the year.

The construction of the new dock and turning basin on the site of the Timber Ponds between Dufferin Road and Duncrue Street was commenced during the year, and considerable progress has been made with the work and also with the dredging and cutting of the approach channel to the dock. The latter work is being carried out by the Board's own employees and the Board's dredging plant, etc. A contract has been placed with Messrs. Charles Brand and Son, London, for the construction of the quays of the new dock and turning basin, with the exception of two quays which are being constructed by Messrs. Joseph Rank, Ltd., to whom the Board granted a lease of land on the West side of the new dock, on which Messrs. Rank are erecting a flour mill.

The 150-tons hammer-head crane purchased by the Commissioners in 1929, was duly erected on the West side of Thompson Wharf, and brought into commission in July last. It has worked very satisfactorily, and is proving of great utility to the shipbuilding industry.

The facilities for the landing and embarking of Transatlantic passengers at Queen's Quay have been extended by the provision of an additional shed containing waiting rooms, accommodation for medical inspections, etc.

The Board have given careful consideration to the question of improving the navigational lights, etc., in the Victoria Channel, and are at present experimenting with acetylene gas lights on two of the buoys and in the outer lighthouse. A diaphone fog signal apparatus has been installed in the outer lighthouse with a view of testing it in comparison with the existing reed horn.

On the invitation of the Commissioners, His Grace the Governor kindly promised to honour them by visiting the Harbour in company with Her Grace the Duchess of Abercorn, on the 12th May, but it is regretted that owing to indisposition he was unable to do so. Her Grace, however, accompanied by the Lady Katharine Hamilton, made an extensive tour of the Harbour, and was afterwards entertained by the Commissioners at luncheon in the Harbour Office.

In May a number of the Commissioners paid a visit to Cork Harbour on the invitation of the Cork Harbour Commissioners. They were formally received and welcomed at a meeting of the Cork Harbour Board by the Chairman of that Board and the Lord Mayor of Cork, and were afterwards conducted on a tour of Cork Harbour, Queenstown, etc., and afforded facilities for inspecting the various features of interest in Cork and district.

Irish Harbour Matters—continued.

On the 24th June Vice-Admiral A. D. P. R. Pound and Officers of H.M.S. "Renown" and H.M. Destroyers "Tetrarch" and "Sesame" visited Belfast Lough. The Commissioners called upon Vice-Admiral Pound on his flagship and welcomed the Admiral and Officers to the Lough. On the 26th June Vice-Admiral Pound and his Officers were entertained at a reception in the Harbour Office.

The Commissioners record with pleasure the honour which His Majesty the King conferred in June last upon Sir Thomas J. Dixon, Bt., H.M.L., one of the senior Harbour Commissioners, by appointing him a Privy Councillor of Northern Ireland.

It is with deep regret that the Commissioners record the death, on the 17th November last, of their esteemed colleague, Sir Thomas S. Wilson, J.P., who had served as a Commissioner for twelve years. The vacancy was filled by the co-option of Mr. James F. McCue.

In April Mr. T. S. Gilbert, owing to ill-health, tendered his resignation as Harbour Engineer. The Commissioners accepted the resignation with regret, and recorded their high appreciation of Mr. Gilbert's valuable services to the Trust. The Commissioners are pleased that they have been able to retain Mr. Gilbert's services as Consulting Engineer in charge of new works. Mr. W. Y. Chamberlain, formerly Assistant Engineer, has been appointed to the position of Harbour Engineer.

During the year the Commissioners held 34 Board Meetings and 123 Meetings of Standing and Special Committees.

Dublin.

Dublin Port in 1930: Record Tonnage.

At the first meeting following his re-election as chairman of the Dublin Port and Docks Board, Mr. Charles McGloughlin said the returns showed that the registered tonnage of vessels entering the port of Dublin totalled 2,454,704 tons, a figure which constituted a record, and was an increase of 116,070 tons over the year 1929.

Among recent industrial developments round the port he instanced the grain silos of the Merchants' Warehousing Co., the flour mill of the Dock Milling Co., Messrs. Lever's modern soap works. Messrs. Gallaher's factory on the East Wall was, he said, an example, along with other new tobacco factories in Dublin, of what modern factories should be. Then they had the British and Irish Steam Packet Company's new stores, offices and lairages, the latter of which, he would say, must be second to none in the kingdom. The same might be said of the oil storage yards, an additional one of which had been added this year.

Modern Tobacco Store.

Regarding the great improvements and development of business in the Custom House Docks and Warehouses, he said that the enterprise of the Board in building modern storage for tobacco at a cost of over £40,000 had enabled them to accommodate their very large requirements of Dublin in this direction now, and so make for the falling off in the spirits and wine bonding that was at one time a large source of the warehouse revenue. It was interesting to note that the duty on clearances of tobacco through this department now exceeded two-and-a-quarter million pounds annually, and the storage of tobacco had enabled the Board to maintain staffs that would otherwise have to be reduced.

Development of the Port.

A large part of this development had come about owing to the Free State's partial abandonment of the Free Trade policy. Now, hand in hand with this industrial development, the improvement of the port itself had gone on steadily, the most important and costly item being the deepening and maintaining of the Channel, and the Board had thought it wise this year to establish as far as possible a continuous survey, so as to get the best value out of the very heavy dredging charges, which run to over £30,000 per annum, and also to detect any possible silting. The deep water quay at the north side of Alexandra Wharf was now almost completed, giving 1,400-ft. of berthage, 32-ft. deep at low water.

Each year additional electric cranes have been added with new and improved trackways. There are four 4-ton cranes on order at the moment, two for the extension and two for the south quays, and in addition one of the Board's largest customers was about to erect a grain discharging plant of the most modern design. The north quays had been re-surfaced in concrete, making it a pleasure instead of a danger to drive on them. The shore and floating plant had been well maintained, and the staff had, he thought, been given every encouragement in any improvement or equipment, etc., that they put forward. He expressed a personal word of appreciation of their various officers in this regard.

There were still some costly items of improvement and repair that had to be faced—for instance, the renewal of the bridge at George's Dock and the bridge in the dock's yard itself, as these were not suitable for modern traffic; also the renewal of the Graving Dock gates. In the light of that little retrospect, he was sure that the Board would work on in confidence, and with the satisfaction of knowing that they were materially helping in the development of their country.

Butt Bridge.

The reconstruction of Butt Bridge had at last been put in hand. The Board had endeavoured to have this bridge reconstructed long before the establishment of the Irish Free State, but were blocked by one interest or another. He thought it illustrated the advantage of having their own Government that the different interests were composed and the construction actually got under weigh in such a short time. The new bridge would harmonise with O'Connell Bridge and be an ornament to the city as well as a great facility to traffic. The contract was completed before the Eucharistic Congress, and in this regard he would like to reiterate that the Board were most sympathetically endeavouring to meet the Congress organisers in every way possible so far as port services were concerned.

Mr. Walter Baird was re-elected vice-chairman.

The Lord Mayor (Senator Alfred Byrne), who presided at the opening of the meeting, welcomed Mr. Hugh Kennedy, who had been co-opted a member of the Board.

Cork.

Deep Water Quay at Cobh. Future of Cork Harbour.

With the exception of the United States Lines, all the trans-Atlantic liner companies have written to the Cork Harbour Board rejecting the suggestion to erect a deep water quay at Cobh. They contend that if vessels came right into the harbour working expenses would increase and there was the possibility of delay. At present passengers and mails are put off into tenders, which meet the liners outside the harbour. The chairman of the Board, Mr. R. Wallace, was given power to probe the matter further. He stated that the United States Line, which was mainly Irish, was willing to take part in the use of Cork Harbour as a terminal port. "If we cannot raise sufficient money in this country," said the chairman, "for national transport to be run in accordance with Irish ideas, the best thing is to fall back on those controlled by people with Irish sympathies." Mr. Wallace mentioned that if liners came to Cobh in 1932 for the Eucharistic Congress the Great Southern Railways were prepared to run special trains from Cork to Dublin night and morning, and tourists would be able to sleep in their cabins at night.

American Pressure.

With special reference to this matter, Mr. J. N. Mullan, European representative of the Raymond Concrete Pile Company, New York, who has been interested in the project since it was first mooted, wrote to the Cork Harbour Board stating that it would be agreed that, if the Government supports Galway, it will not support Cork. "Ireland can only stand one real harbour, and if your Board will appoint a Committee and go to the Government in a body asking that Cork be developed as the national harbour of the Free State, I feel certain that the President and the entire Government Party will support you.

"This entire development should be on the same basis as the Shannon scheme—a Government proposition handled by the Harbour Board in the same way as the Electrical Supply Board handles the Shannon development. The most important thing, in my mind, is for your engineer, Mr. Price, to go ahead with the borings, and then I will have all the details worked out and submitted to you, as you must realise that to complete the harbour by 1932 will require quick action.

Financial Matters.

"As to the financing of the scheme, we are prepared to work it out for you. I am certain that it will be a success from a financial standpoint, and if completed by 1932 it will be one of the best advertisements for the development of the Free State, as you will have people from all over the world there in 1932 who will report to their people on returning to their different countries. This, in turn, will attract people to Ireland, more so now that the new chain of hotels are to be built on the plans laid out by Mr. Howard Harrington and Mr. Sheedy, who is the vice-president of the American Steamship Line.

"This move alone demands proper harbour facilities to encourage visitors to Ireland. Otherwise it will be a failure, as tourists will not travel to any country unless proper transportation is furnished to them.

"As to the plans to develop the front of the harbour of Cobh, I am assured by the steamship companies here that they will not bring their boats up into the proposed new area around the turn at Bar Rock. The White Star Line are very positive about this, and Mr. O'Connor, the head of our Shipping Board at Washington, does not believe that it is a practical proposition at all, and that it is simply wasting money.

Irish Harbour Matters—continued.

"We are anxious to build this harbour for the Irish Free State. We are ready to go ahead and furnish you with complete figures as to cost, etc., as soon as you furnish us with all the details as to borings, and we believe we can arrange to have the dock in shape in 1932 to receive ocean liners."

It is pointed out that the Board had suspended the borings for twelve months, and the last known of Mr. Mullan's scheme was when Mr. B. B. Egan, T.D., was asked to interview the Minister for Industry and Commerce.

It was decided to further discuss the matter in Committee.

Cork Harbour Returns for 1930.

The chairman, Mr. R. Wallace, informed the Board that the tonnage handled in the port during 1930 was 3,073,136, as compared with 3,305,858 in 1929 and 3,094,983 in 1925. That only included liners outward bound. He was glad to see that the cargo trade had increased, the figures for 1930 being 367,776, as against 283,959 for 1929, an increase of 84,000 tons. Cross-Channel tonnage was up by 79,000 tons. Liners were down by 400,000 tons, the figures being, for 1930, 2,042,694, as against 2,430,873 tons for 1929, which meant that twenty liners less left Cork port outward bound than in 1929.

Passengers leaving Cobh for the United States in 1930 numbered 16,572, and for the Continent 1,466. From the U.S.A. there landed at Cobh 11,362 passengers and from the Continent 1,174.

They would observe, said the chairman, that Continental traffic had gone up, and rightly so. The ideal route from Ireland to the Continent was via Cobh. Having handled 12,536 passengers, the members should ask themselves if the development of the port was worth while. He suggested that the development of the lower port was a matter worthy of serious consideration. The figures he had given showed that the total emigration worked out at four thousand persons. It was therefore on the tourist traffic that the port of Cork would have to depend. Mr. Mullan had opened up a big question, and they would have to ask themselves whether they would adopt the bigger or the smaller scheme.

Mr. A. C. Horne said that the Government should be asked to lend a hand in the development of Cobh as a national port.

Limerick Dock Extension.

April next will probably see the starting of work on the construction of the Limerick Dock extension and the electric railway link connecting the docks with the Great Southern Company's terminus at Carey's Road, Limerick. A Bill authorising the construction of the electric railway will come before the Dail when it reassembles, and it is expected that the measure will meet with no opposition. One effect will be to reduce freight charges on goods imported via Limerick for various centres in the South and West. The cost of transporting coal alone from the dock to the railway will, it is understood, be reduced by 4s. 6d. per ton. This should prove of great benefit to business at the port, and also to traders. The Free State Minister for Industry and Commerce is anxious to assist the Limerick Harbour Board in furthering their schemes, which will involve an outlay of £150,000. This will be met by a loan guaranteed by the Government and supplemented by the conversion of the Harbour Board's investments of £60,000.

In addition, Messrs. Bannatyne and Sons, flour millers, have obtained permission from the Harbour Board to erect a large grain silo at the docks adjoining their present premises.

Hull and the Humber.

The Humber Ports and the Proposed New Bridge.

THE possible adverse effect of the proposed road bridge across the Humber to joint the East Riding and North Lincolnshire at a cost of £1,750,000 or more upon the navigable channels of the river and access to the ports of Hull and Goole continues to be the supreme question, to the exclusion of almost everything else pertaining to the project among dock and shipping interests. Moreover, the Hull Corporation's Parliamentary Bill has been subjected to severe criticism at the hands of Dr. Andrew E. Jackson, the solicitor to the Humber Conservancy Commissioners. In his report presented to the January meeting of the Board, Dr. Jackson alleges that the Bill, as a Bill, only contains many objectionable features. The report points out that the clause referring to subsidiary works during the construction of those of a permanent nature is in the widest possible terms, and that although the promoters of the Bill are aware that the Conservancy Board is the public authority entrusted with the conserving of the river and is the local lighthouse authority, the rights and duties of the Board are entirely ignored. It is also stated that there are no clauses for their protection or requiring their consent to the plans and sections of the main or subsidiary works, to the lighting of the proposed bridge, or generally as to the steps to be taken for the protection of navigation.

"Further," the report continues, "with the exception of the clauses which require the consent of the Board of Trade or the London Trinity House to works below high-water mark and to the lights to be exhibited, no clauses whatever for the protection of navigation are inserted in the Bill. In Bills of this character it is usual for clauses to be inserted defining the main span or spans of a bridge and allowing no variation in the length thereof, or providing that all plans and sections of the bridge and all subsidiary and temporary works should be approved by the Conservancy Authority, or preventing the erection of temporary works during the construction of the bridge so as to cause unnecessary inconvenience to navigation, or limiting the liability of vessel-owners for damage to the bridge unless such damage has arisen from the wilful act or default of the persons in control of such vessels. Neither are there any clauses making provision for the removal of wrecks due to any vessel colliding with the bridge, or preventing the discharge or escape from the bridge during construction or on completion of any offensive, injurious or solid matter into the river, or making provision for adequate fog signals and for such leading lights as may be necessary, whether on the bridge or elsewhere, to take the place of leading lights which may be rendered obsolete by the bridge. Moreover, there are no clauses making provision for the assistance of vessels through the bridge-way either permanently or during the construction thereof, or making such provisions as may be deemed necessary for the depth of the foundations of the bridge so as to allow for any future deepening of the channels, or making such other provisions as may be deemed necessary in any particular case for the prevention of danger to navigation and the assistance thereof." It is also pointed out that there are no clauses in the Bill placing any obligation on the Bridge Board to prevent, by training walls or otherwise, or to remedy by a dredging clause, any damage done to or interference with the channels of the Humber. Dr. Jackson, in this connection, calls the special attention of the Conservancy Board to the financial clauses, seeing that under the powers of the Bill it would not appear that any clauses which might be introduced for the protection of the river could be adequately financed. The solicitor's report was included in the minutes of the Parliamentary Committee, which were adopted without discussion.

Death of Mr. T. Sutcliffe.

At the same meeting of the Humber Conservancy Board, Mr. J. H. Fisher who presided, referred to the death of Mr. T. Sutcliffe, of Grimsby, deputy chairman of the Board, and spoke in high terms of appreciation of his work. A resolution of condolence was passed and ordered to be sent to the relatives. To fill the vacancy Mr. Bentley Bennett, of Goole, was elected deputy chairman.

Personalia.

Mr. Edward Lake, who was for many years docks manager at Hull for the North-Eastern Railway Company, and subsequently general manager of the Barry Railways, died at his home at Ripon on February 6th and was interred at Hull on the Monday following. Mr. Lake had reached the ripe age of 76, and was very highly esteemed in dock and railway circles, alike for his personal qualities and his marked administrative abilities. His sojourn at Hull coincided with a period which inaugurated a new epoch in the dock and railway history of Hull, viz., the absorption of the old Hull Dock Company by the North-Eastern Railway Company and the strong rivalry between that company and the Hull and Barnsley Railway and Dock Company. To-day all the docks and railways are merged in the London and North-Eastern Railway group.

Institute of Transport Dinner.

Among the principal guests at the forthcoming dinner of the Institute of Transport on March 5th, at the Connaught Rooms, London, W.C.2, will be His Excellency the Italian Ambassador, The Rt. Hon. Lord Ponsonby of Shulbrede (Parliamentary Secretary to the Ministry of Transport), and the Chairman (The Rt. Hon. Sir Arthur Griffith-Boscawen) and members of the Royal Commission on Transport.

The speakers will include the President of the Institute (The Hon. Sir Arthur Stanley, G.B.E., C.B., M.V.O.) and Sir Josiah C. Stamp, G.B.E. (Past President).

Grecian Port Matters.

ACCORDING to the statistics which have just been published by the Greek Government, shipping at Greek ports during the first ten months of 1930 included the arrival of 2,775 ships, representing 4,392,513 net tons, from foreign ports, and the clearance of 2,015 ships, representing 3,453,977 net tons, to foreign ports. Among the ships arrived, 937 ships representing 879,278 tons were Greek, and 1,838 ships representing 3,513,235 tons were foreign. Of the ships cleared, 500 representing 476,336 tons were Greek, and 1,515 representing 2,977,641 tons were foreign. During the corresponding period of 1929 arrivals from foreign ports at Greek harbours included 2,951 ships, representing 4,624,561 tons, of which 895 for 865,357 tons were Greek, and 2,056 ships for 3,759,204 tons were foreign. Clearances included 2,178 ships for a tonnage of 3,508,500 tons, of which 546 ships and 477,615 tons were Greek and 1,632 ships, representing 3,030,865 tons were foreign.

From these figures it appears that international shipping at Greek ports during the first ten months of 1930 has shown a decrease in respect to shipping during the corresponding period of 1929, of 176 ships and 232,048 tons arrived and 163 ships and 54,523 tons cleared. The participation of Greek mercantile marine to national shipping has shown an increase of 42 ships and 13,921 tons arrived and a decline of 46 and 1,279 tons cleared; while foreign lines have shown a general decline of 218 ships and 245,969 tons arrived, and 117 ships and 53,244 tons cleared.

The Government is following with great interest the development of shipping at the various ports, but unhappily there is still a lack of organisation, and shipping depends very much upon labour conditions. Harbour organisations which have been created here and there are yet unable to control all the harbour operations. At Salonika, for example, the Free Zone Administration operates unloading only in a section of the port, whilst in other sections labour is free. Furthermore the Free Zone does not control its own dockers, but must employ them from private enterprise. One firm undertakes unloading from the steamer's winch to the quay by means of lighters; another firm undertakes carriage from the quay to the warehouses; and a third the handling of goods in the warehouse. Each firm is paid by tons of goods handled, while it must pay workers daily. It is evident that these intermediaries are influencing the cost of operation. Unloading used to be performed by ship's agents, who have thus lost an important source of income. In order to cover this loss the agents have arranged with the various lines that a clause be appended on each bill of lading reading as follows:—"The consignee will pay at destination a charge of 2s. on ..... and 1s. on ....." The Chamber of Commerce, Salonika, considers such decision as an abuse, owing to the fact that by a decree of the Greek Government of November 11th, 1929, Article 1, steamship agents have been authorized to collect from receivers a charge as "droit d'agence" varying from 30 drachmas to 6.70 drachmas, that is to say from about 2s. to 6d., per ton in order to cover their loss arising from the fact that they have no longer the operation of unloading. The Chamber of Commerce has addressed a letter to the main lines pointing out that the collection of the 2s. on the basis of the clause on the bill of lading is an abuse. The agents have addressed to their line the following letter:—

"The dispute which has arisen between the Free Zone and the Chamber of Commerce on one side and Shipping Agents on the other, and which has taken such an acute character, is entirely due to the arbitrary attitude taken up by both the aforesaid Institutions towards Agents in the matter of the discharge of ships by the Free Zone, as a consequence of which Shipping Agents deeply feel that their only protection lies in the clause which their respective Companies have agreed to insert in their Bills of Lading.

"Replying to the various points raised in the letter of the Chamber of Commerce, we would remark as follows:—

"1.—The scale of rates which by decree the Government have fixed for the remuneration of Agents was only granted when the Free Zone and the Chamber of Commerce realised that Agents were taking steps with their Companies for the protection of their legitimate interests. Even then, however, for some obscure reason, the Government have limited the validity of the decree to the 31st March, 1931, which fact increases the feeling of insecurity of Agents as the Authorities may want to impose arbitrarily a further reduction after 31st March, or cancel the rates altogether. We would add that the rates provided for in your clause are not higher in the average than those which were allowed us by the Authorities previous to the recent change and that they are more than justified by the very reduced traffic owing to which earnings of Agents hardly cover their overhead expenses.

"2.—It is absolutely unreasonable to pretend that the rates provided for in the clause are a burden to trade, for they only are in a few cases, and by a few pence per ton, higher than the rates recently allowed by the Government. In fact, Consignees generally have not made any complaint against the clause and protests have only come from a few merchants who happen to be on the Committee either of the Free Zone or of the Chamber of Commerce and whose action is prompted not by economical reasons, but by personal obstinancy, as evidenced by the extraordinary tone of the letter of the Chamber of Commerce, which is signed by one of these merchants. At the same time we consider that the threat regarding the 'serious consequences' that the clause may have for Shipping Companies is not serious, for there is not the slightest fear that a difference of a few pence per ton in landing charges will cause traffic to move through other channels than hitherto.

"3.—As regards the work and trouble of Agents which the Chamber of Commerce seem to think have come to an end by the fact of landing operations being now in the hands of the Free Zone, experience has shown, since the new regime has been in force, that such is far from being the case, as Agents have still to carry out the duties of translating and making out several copies of manifests, stevedoring, tallying, delivering cargo to consignees and in general supervising all operations connected with discharge of the ships. The only operation which Agents no longer have to attend to is payment of lighterage, but this relief does not by any means permit of a reduction in the staff required by each Agent, which has remained unchanged in every case.

"4.—The Chamber of Commerce assert that the more important Shipping Companies have not agreed to the insertion of the clause. This is not correct, for the only important Companies that have so far not done so are the Lloyd Triestino and the Sitmar Line, both of which are entirely in favour of the application of the clause and their Agents here are at one with us, but they are prevented for the time being from doing so by the fact that the Serbian Line, which are their direct competitors, have not agreed to the clause, owing to political reasons connected with the Serbian Free Zone at Salonica. As regards the New York Conference Lines they are still considering the matter, and it is expected that they will fall in line.

"5.—With regard to the legal side of the question our lawyers have gone very carefully into the matter and they are decidedly of the opinion that there is absolutely nothing in the clause that may be construed to be in opposition with the 'laws of the country' as the Chamber of Commerce would like you to believe."

From investigations made it does not appear that the Government has any intention to reduce the charges allotted to the steamship agents, and a high officer of the Greek Mercantile Marine Department insisted upon the fact that if the present charges are not sufficiently high for the agents in Salonica they could apply for an increase.

What is certain is the fact that exports from Salonica represent about one-ninth of the imports, whereas at Piraeus exports are only one-tenth. On the other hand there is no doubt that the Free Zone Administration requires the co-operation of the steamship agents owing to the fact that it has not as yet reached its full efficiency, although the fact that it has succeeded in securing even part of the trade which used to go through the Jugoslav Free Zone shows the satisfactory influence of this institution in connection with Salonica's trade.

The question of Salonica's harbour enlargements is being seriously considered by the Government, and the Greek Ministry of Communications has practically terminated the study of the project by G. Hersent, Société des Travaux Publiques, in this connection, thus confirming that, for some unknown reason, no tender will be called for such concession, and that preference will be given to this French concern which has undertaken the Piraeus harbour enlargements.

When the harbour enlargements which are now being undertaken at Cavalla, Volos, Calamata, Catacolo, Nauplia, Candia and Canea are completed, the respective Harbour Boards will call for tenders for the construction of warehouses and electric unloading facilities. It is advisable for British manufacturers to follow the situation very closely, since much interest is also shown from other sides.

The Harbour of Piraeus.

By A. Giordano.

Historical.

THE history of the Harbour of Piraeus alone shows the reasons for the development of this harbour. Originally the commercial port of Athens was at Phaleron Bay. However, signs of the existence of another harbour, namely, that of Piraeus, can be traced as far as 590 B.C., and the highest development had been reached in 493 B.C. Shipping at Piraeus showed a decline after 403 B.C., during the period of Lissander, and it was wholly destroyed during the period of Syla in 86 B.C. During the time of the Roman Empire and afterwards the Piraeus Harbour did not exist. During the Middle Ages, where Piraeus now exists, there was a small community known as Porto Leone. In 1821, when the revolution for the Liberty and Independence of Greece broke out, only a few houses of fisherfolk existed in the district of what used to be one of the most flourishing harbours of the East. It was only in 1834, when Athens became the capital of Greece, that shipping showed an upward tendency, but even in that year Piraeus had not more than 600 inhabitants.

Shipping at Piraeus has been, and is, influenced by the development of the whole country itself, and in this regard it should be noted that the population of Greece has increased from 2,631,952 inhabitants in 1907 to 6,204,684 inhabitants in 1928; respectively the area has increased from 63,211 square kilometres to 127,000 square kilometres, and it will be seen that Piraeus has felt the influence of these events. As a matter of fact, the number of inhabitants has uninterruptedly increased since 1834, as can be seen from the following figures:—

Year	Inhabitants	Year	Inhabitants
1854 ...	6,600	1907 ...	71,580
1879 ...	21,000	1920 ...	135,833
1888 ...	34,000	1928 ...	260,161
1896 ...	43,000	1930 ...	170,000

The increase in population of the town of Piraeus and of the immediate hinterland of this harbour has led to an increase of shipping, particularly after a certain part of the Greek Anatolian refugees had settled there in 1922 to 1924, when the population was practically doubled, and to-day Piraeus is the most important Greek port, as is confirmed in the statistics at the foot of this page.

Geographical.

But in order to further appreciate the opportunities of the harbour of Piraeus one must consider the geographical position of the port itself. The port of Piraeus is situated in 23 deg. 38-min. 40-sec. longitude East Greenwich and 37 deg. 56-min. 10-sec. north latitude, on the route between the Eastern and Western Mediterranean, and on the line between the Suez Canal and the Black Sea; and, as a matter of fact, practically all the ships bound from the Northern Mediterranean, and particularly from the Adriatic to Egypt, call at Piraeus. The harbour of Piraeus is situated in the northern extremity of the Gulf of Saronicos, formed by the Peloponese Peninsular and the Attica Peninsular. The harbour is, furthermore, protected by some islands. The port of Piraeus is quite plain, and only about 30 km. from the sea; a chain of hills protects the harbours—on the east, Mount Hymettus and Mount Pentelicon; on the north, Mount Parnis; and on the west, the Scaramanga Hills. Yet northern and southern winds are blowing heavily practically during a great part of the year, and while from the sea the construction of various breakwaters will much influence the situation of the waters from the seashore, there is no doubt that the development of the building industry in the territory between Piraeus and Athens, and the construction of warehouses in the port itself, will do much to improve the situation of the harbour in connection with winds from the north.

Communications.

The port of Piraeus is connected with an electric, partially underground railway to the city of Athens, also with Phaleron Bay, whilst with the remainder of the country it is connected by (a) the Larissa and Salonica single track (1.44 metres gauge) railway line which is owned by the Greek State Railway Administration, and (b) the Peloponese single track line (Kalamata, Katacolo and Patras). The latter line is owned by a private company called Railway Piraeus-Athens-Peleponese (R.P.A.P.) Co., and is only one metre broad, so that communications are rather difficult. Both lines have connections with the various parts of the harbour, so that goods can be unloaded directly from the ships' holds into the railway cars.

For several years the harbour of Piraeus has been linked up by the Italian air line services (Aereo Espresso S.A.) to Brindisi, Venice, etc., on one side, and to Istamboul and Rhodes on the other side; by the Imperial Airways service from London to Piraeus, Egypt and India, and by the Union Arienne, France to Naples, Piraeus and Beyrouth.

Shipping Statistics.

Before going into the details of what is known at present as the port of Piraeus it may be worth while to examine also the position of shipping handled therein.

According to the information which has been kindly supplied to me by Engineer Limpritis, the head of the technical department of the port, the number of ships calling at Piraeus and their tonnage has had the following development:—

SHIPS CALLING.

Year	From Greek Ports		From Foreign Ports		Total	
	No.	Tonnage	No.	Tonnage	No.	Tonnage.
*1890					2,460	1,500,000
1905	3,000	700,000	2,350	2,550,000	5,350	3,250,000
*1913			3,962	4,202,076	3,962	4,202,076
1927	5,451	1,553,908	2,744	4,437,977	8,195	5,991,885
1928	5,283	1,810,214	2,849	4,569,622	8,132	6,379,836
1929	5,230	1,823,824	2,745	4,722,633	7,975	6,545,917
†1930			642	1,298,792		

* No statistics available. † January—July.

As can be seen from the above, the total number of ships calling at Piraeus has practically uninterruptedly increased since 1890, with very slight alterations due to exceptional factors, such as the arrival of the Greek refugees from Asia Minor in 1922 to 1924, the arrival of a larger number of ships in ballast from foreign ports owing to the world-wide shipping crisis, etc.

NUMBER OF STEAMERS AND TONNAGE.

Ports.	1929 No.	1929 N.R. Tons.	1928 No.	1928 N.R. Tons.	1927 No.	1927 N.R. Tons.	1926 No.	1926 N.R. Tons.	1925 No.	1925 N.R.Tons.	1924 No.	1924 N.R. Tons.
Piraeus ...	7,947	6,442,011	7,764	6,037,132	8,322	5,798,429	8,312	5,990,327	7,940	5,387,624	6,702	4,599,914
Patras ...	3,176	2,085,330	3,211	2,054,570	3,048	1,767,267	3,117	1,720,167	3,124	1,729,842	2,491	1,301,250
Thessaloniki	1,514	1,504,862	1,640	1,601,469	1,622	1,502,973	1,660	1,469,840	2,094	1,684,776	1,840	1,476,550
Volo ...	1,778	1,065,219	2,122	1,053,624	1,971	908,978	1,768	898,191	1,922	1,032,186	1,779	854,953
Corfu ...	1,039	848,732	1,087	848,018	1,116	758,631	1,164	898,088	1,298	925,072	1 048	804,533
Syra ...	1,496	306,891	1,489	775,778	1,698	914,481	1,614	930,740	1,664	771,373	1,330	541,787
Herakleon ...	866	692,076	806	665,392	836	719,574	866	725,548	799	684,460	688	502,604
Chios ...	1,305	647,167	1,320	711,099	1,473	585,582	1,564	603,151	1,225	638,551	1,004	428,258
Kalamata ...	777	573,213	617	543 875	628	584,445	609	491,895	653	452,631	538	361,750
Mytilene ...	867	558,878	925	587,773	858	637,217	873	794,834	1,015	941,843	768	777,407
Kavalla ...	758	483,390	667	458,479	689	490,096	824	499,492	887	536,285	744	435,448
Chalkis ...	1,363	438,727	1,535	446,898	1,964	672,399	1,906	608,532	2,108	568,150	2,134	616,378
Chania ...	556	406,285	529	367,035	544	390,825	632	510,548	555	474,263	530	364,710
Samos ...	402	357,241	417	394,166	375	265,957	343	260,750	469	364,465	414	273,460
Prevesa ...	869	249,861	814	216,877	946	228,357	938	235,303	937	208,035	727	143,553
Zante ...	581	249,578	616	262,151	441	207,809	689	229,768	847	252,687	878	275,119
Dedeagatch	446	249,089	494	294,082	482	343,577	468	353,352	546	398,817	532	356,512
Andros ...	180	180,210	218	143,963	269	243,415	316	302,166	261	163,276	240	130,726
Argostoli ...	267	131,427	273	141,262	281	143,164	305	132,950	304	116,602	340	147,664
Limnos ...	305	125,962	335	142,545	278	141,208	279	134,658	369	172,986	233	116,915
Lavrion ...	353	115,784	366	125,891	429	126,999	465	135,978	309	83,896	277	84,349
Spetsai ...	488	110,708	473	107,560	383	76,883	399	76,407	493	85,050	531	83,969
Kea ...	95	89,040	58	49,709	—	—	—	—	—	—	—	—
Hydra ...	474	72,584	459	82,387	382	57,814	375	64,996	397	59,984	471	72,646
Ithaki ...	248	52,322	210	53,834	274	55,05	202	37,120	141	25,246	220	40,823
	28,150	18,036,587	28,445	18,165,569	29,309	17,621,685	29,688	18,104,801	30,357	17,758,100	26,519	14,791,278

The Harbour of Piraeus—continued.

Imports and Exports.

A better idea of the importance of the harbour of Piraeus can be had if one examines the statistics regarding the goods unloaded and loaded in this port as they appear from the following figures:—

Year	IMPORTS			EXPORTS		
	From Greek Ports Tons	From Foreign Ports Tons	Total Tons	To Greek Ports Tons	To Foreign Ports Tons	Total Tons
1905						520,000
1913			784,902			88,630
1915	92,992	813,934	906,926			
1916	156,802	647,000	803,802			
1917	137,570	134,851	272,421			
1918	199,472	389,012	588,484			
1919	168,345	683,652	851,997			
1920	198,876	679,446	878,322			
1921	206,574	820,586	1,027,160			
1922	193,335	715,024	908,359		32,307	
1923	211,894	1,201,367	1,413,261		25,587	
1924	212,681	1,348,912	1,561,593		32,477	
1925	177,230	1,525,718	1,702,948	227,277	59,200	286,477
1926	273,749	1,319,013	1,592,762	224,371	88,785	313,156
1928	296,576	1,527,095	1,823,671	239,833	94,623	334,456
1929	337,702	1,733,679	2,071,381	259,704	122,069	381,773
1930	Not yet available					

Shutes outside Warehouses, which are used for shifting bags from the Second Storey.

The above figures clearly show that the port of Piraeus is, above all, an import harbour, the exports reaching in 1929 only about one-sixth of the imports, and a distribution harbour, as can be seen from the fact that only one-third of the exports goes to foreign ports, whilst two-thirds are going to other Greek ports, and they include, evidently, goods imported at Piraeus from foreign countries and then distributed over the islands which are included in the territory of the Greek Republic. This is also confirmed by the satistics concerning the Piraeus railway traffic, of which the following is a summary:—

Traffic at the Piraeus State Railway Station.

IMPORTS BY RAIL.

	1928/29	1929/30	Quarter to October 15th 1930.
	Tons	Tons	Tons
Baggage	247	250	136
High Speed	446	360	155
Low Speed	54,598	56,952	23,559
Animals	215	185	—
Service Transport ...	22,718	10,690	75
Total	78,224	68,537	23,925

EXPORTS BY RAIL.

	1928/29	1929/30	Quarter to October 15th 1930.
	Tons	Tons	Tons
Baggage	213	215	120
High Speed	1,693	1,515	391
Low Speed	21,987	19,184	8,428
Animals	4,227	8,722	2,578
Transport Service ...	—	1,323	329
Total	28,120	30,959	11,846

Interior View of Warehouses in the Port of Piraeus.

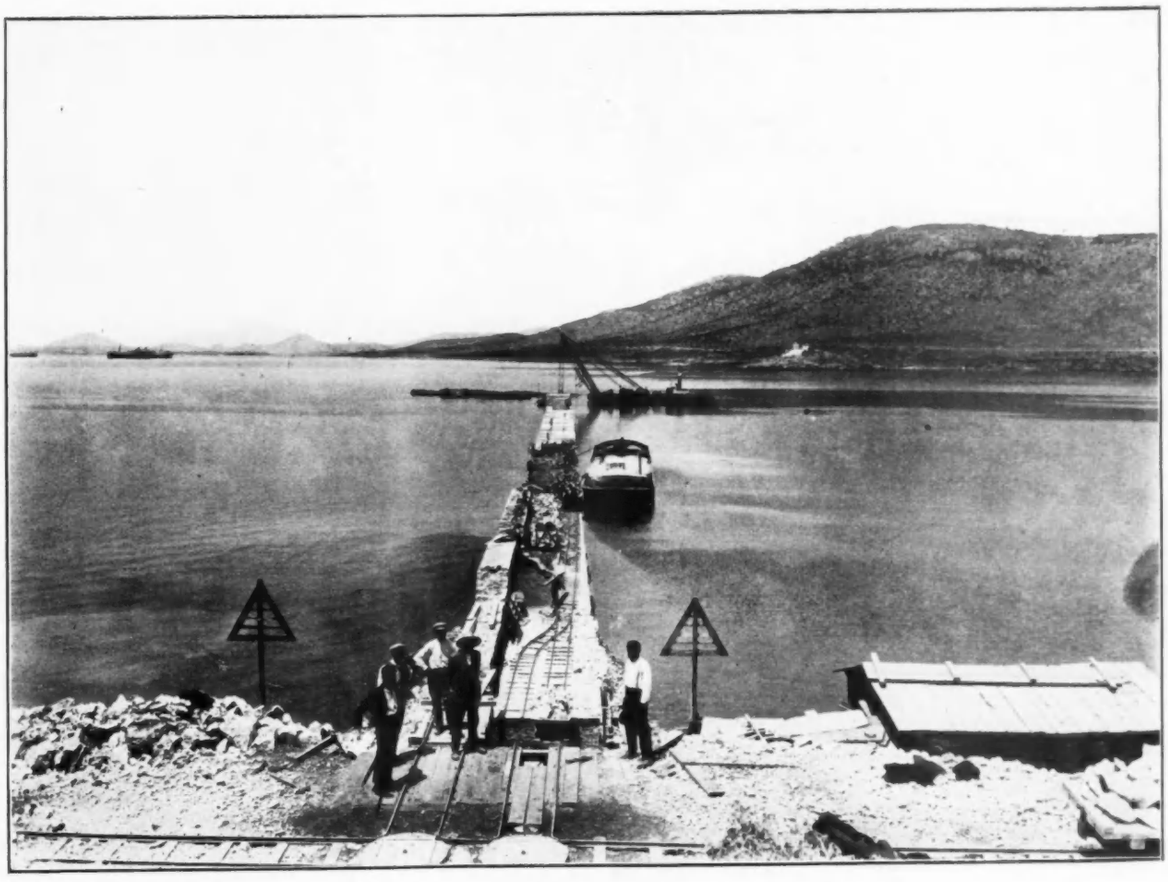
It should be noted, furthermore, that while in 1905 the volume of goods imported and exported at the port of Piraeus (520,000 tons) reached about one-sixth of the total net register tonnage of ships calling at Piraeus (3,250,000 n.r.t.), in 1929 the total of the goods imported and exported (2,453,154 tons) represents more than one-third of the total tonnage calling at such port (6,545,917 n.r.t.), which means that a better exploitation of the tonnage calling has taken place, particularly after the war, and that owners have found much more advantage in calling at Piraeus now than hitherto.

Prior to going into the details of the trade, it may be worth while examining the share which the various maritime countries enjoy in the trade of the port of Piraeus as it appears from the following figures:—

	Nationality.	1913		1927		1929	
		No.	N.R.T.	No.	N.R.T.	No.	N.R.T.
	Greek	2,366	1,395,329	6,359	2,437,365	5,859	2,402,876
1.	Austrian	374	801,673	—	—	—	—
2.	British	270	440,090	459	1,038,216	441	973,016
3.	Bulgarian	3	1,810	34	36,629	37	39,335
4.	Belgian	18	22,823	1	1,862	4	6,207
5.	Czeckoslovak	—	—	1	1,973	—	—
6.	Danish	10	10,194	6	10,584	9	11,240
7.	Dutch	44	48,185	75	121,100	70	103,008
8.	Egyptian	—	—	3	2,029	6	6,997
9.	Finnish	—	—	1	2,363	2	988
10.	French	130	270,050	128	429,856	154	497,092
11.	German	155	277,948	129	210,926	147	248,721
12.	Italian	300	450,008	648	1,241,164	731	1,519,441
13.	Yugoslav	—	—	80	71,902	70	61,831
14.	Japanese	—	—	4	13,339	15	65,761
15.	Norwegian	5	6,871	42	52,494	63	94,668
16.	Portuguese	—	—	5	2,161	—	—
17.	Persian	—	—	4	1,651	5	1,896
18.	Polish	—	—	—	—	3	1,020
19.	Peruvian	—	—	—	—	1	1,634
20.	Russian	151	318,348	42	52,757	78	110,298
21.	Roumanian	103	126,093	80	103,312	73	97,411
22.	Turkish	7	9,927	15	11,203	84	78,174
23.	U.S.A.	6	2,503	37	91,830	82	186,345
24.	Spanish	—	—	9	10,096	2	4,523
25.	Swedish	—	—	33	47,013	39	44,551

The Port of Piraeus.

General View of the Port of Piraeus.



Construction of Breakwater in the St. George's Bay.

The Harbour of Piraeus—continued.

What strikes the eye of the observer of these figures is, besides the fact that the share of the British Flag has more than doubled since 1913, (a) the large increase of the U.S.A. share in the shipping of Greece's largest harbour, as can be seen from the fact that the number and tonnage of American ships calling at Piraeus has increased from 6 ships and 2,503 n.r.t. in 1913 to 82 ships and 183,345 n.r.t. in 1929, and these figures have a large importance in connection with trade, not only in Piraeus but over the whole Levant and Near East; (b) the increasing progress of certain Levant Flags, such as Bulgaria and Turkey, the share of which has largely increased and the development of which must be followed with interest, as both Bulgaria and Turkey may become active competitors in this part of the world, particularly owing to the support which their Governments are granting to their Mercantile Marine, and (c) the large progress which has been made by the Italian Mercantile Marine, which occupies the first position among foreign maritime countries in the harbour of Piraeus.

Two-ton Electric Cranes in the Harbour of Piraeus.

However, the question of the development of shipping in the harbour of Piraeus cannot be thoroughly understood unless one considers also the various factors of trade and exactly the main goods imported, of which the following is a brief summary:—

		1913	1928	1929
Coal	...	393,765	619,364	692,709
Lumber	...	55,112	83,887	86,793
Cotton	...	1,167	16,546	
Sugar	...	12,182	44,320	22,792
Coffee	...	2,196	2,997	2,979
Wheat	...	152,252	269,119	309,543
Cement			37,303	44,971

If these figures are compared with the total shipping in the harbour of Piraeus it will be noticed that while before the war the coal and wheat imports only represented about 72 per cent. of the total trade, in 1929, even if there is added to coal and wheat the general cereals trade, it will be seen that the volume of such imports in bulk does not reach even 50 per cent. of the total volume of trade, which means, therefore, that the general cargo trade has greatly increased, evidently owing to the increased requirements of the country due to the augmentation of the population.

Future Development.

It can easily be understood that under the present circumstances of progress two questions have to be faced by the Greek Government, namely (1) the problem of harbour enlargement and improvements, and (2) the problem of harbour operation and organisation, as up to the present the harbour has been in charge of an ordinary harbour master without organisation, and both owners and receivers have difficulties in having their work performed efficiently owing to the lack of organisation. Several complaints have been made, but no satisfaction has been obtained. It is important that the shipping community have a daily list, posted at important points in the harbour, showing the hours of arrival and sailing, names, net register tonnage, imports and exports, and where lying, of all tonnage using the port of Piraeus. Official information concerning the daily input and output of each vessel, which necessarily means an efficient control of all dock workers, and which would provide an official establishment of the custom of the port for loading and discharging. An official account covering all port charges and a brochure setting out the dues, costs of loading and discharging, together with a summary of the facilities of the port of Piraeus with a map in support. Greater dry-dock accommodation to encourage owners to effect repairs and carry out surveys in the port. Official weighing machines for weighing all goods loaded and unloaded, and official certificates provided where required. Close co-operation of docks and railways facilities with a view to quicker despatch.

After careful consideration the Government made, on May 13th, 1930, a special law for the creation of a Harbour Board, which is to include representatives of the various Ministeries concerned, of the Chambers of Commerce of Piraeus and Athens, of the town authorities, of the railway administrations, and finally of labour. Such representatives are to be elected by the various Departments and are to form a Board of 27 members, which is to elect the Executive Committee, co-operating with the President of the Board, who is also elected by the Council. The Government will not make any allowance to the Board, and the expenses of its operation are to be covered with the receipts from a special tax imposed on the Customs duties, and from the operation of the cranes and warehouses which have been completed and which are to be built. The Harbour Board will undertake unloading, loading, stevedoring, warehousing with labour employed by the Board itself. Since, up to the present, labour has been free and every enterprise or firm has been free to utilise the labour it liked best, a selection of the dockers now available will be made, and those who do not appear to be efficient will be dismissed and an indemnity will be paid to them in order to enable them to obtain other employment.

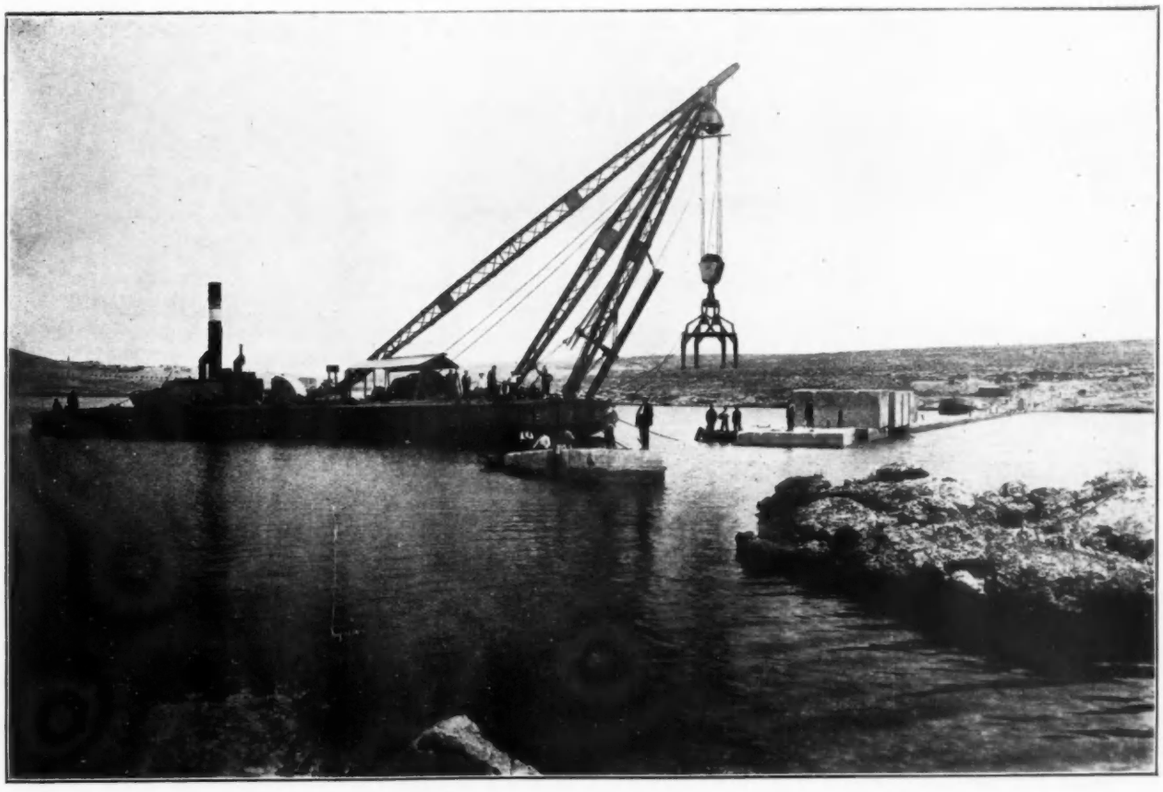
A Two-ton Crane in the Port of Piraeus.

Port Tariffs.

At present there does not exist a definite tariff for unloading and loading, and according to information which has been kindly supplied to me by the Department of the Mercantile Marine of the Ministry of the Navy it would appear that the cost of unloading goods at Piraeus from the ship's hold on to the quay is now averaging the following figures:—Total amounts to be paid by receivers: Coal, 27.00 drachmas per ton; wheat, 32.50 drachmas per ton; cement, 35.00 drachmas per ton; lumber, 23.60 drachmas per ton. Of course, these charges do not include expenses for working during excepted periods.

The Port of Piraeus.

Entrance to the Port of Piraeus.



Construction of Breakwater in St. George's Bay.

The Harbour of Piraeus—continued.

However, owing to the fact that labour is not controlled as yet, and that operations are done by hand, it can hardly be seen how one can always rely on these charges.

The law above referred to, however, has in view the creation of new tariffs for unloading, loading and warehousing, also taking into consideration the increased facilities which will render unnecessary the employment of the present number of lighters, which is in excess of 800, and for which, as will be seen, a special dock is in course of completion; consequently there will be a cutting down in charges. An idea of the results which are expected to obtain may be gathered from the following figures:—Coal (daily quantity which can be unloaded now with the existing facilities—8-hour day), 5 to 600 tons; daily quantity which it is expected to be reached when facilities are increased —8-hour day, 1,500 tons. Wheat, in bulk (daily quantity which can be unloaded now with the existing facilities—8-hour day), 200 tons per hatch per day; daily quantity which it is expected to be reached when facilities are to be increased—8-hour day, 1,500 tons.

Covered Space between Two Warehouses.

At present a ship with 4,000 tons of coal takes about 10 days to unload at Piraeus, while with the new facilities it will only take three, and it can easily be seen what possible saving of expenses this will mean. The Harbour Board anticipated that the new tariffs would be put into operation on January 1st, 1931.

Charges for all other harbour services are clearly established. Pilotage is compulsory for all foreign ships, and the following fees (in drachmas) are charged for such service:—

CARGO VESSELS.

Net Tonnage	1st Port	2nd Port	3rd, 4th and 5th Ports	6th Port	Movements in Port and Entrance and in Basin
251— 500	600	450	300	150	300
501—1000	1000	750	500	250	500
1001—2000	1400	1050	700	350	700
2001—3000	1800	1350	900	450	900
3001—4000	2200	1650	1100	550	1100
4001 & above	2600	1950	1300	650	1300

PASSENGER VESSELS.

251— 500	450	337.50	225	112.50	225
501—1000	750	562.50	375	187.50	375
1001—2000	1050	787.50	525	262.50	525
2001—3000	1350	1012.50	675	337.50	675
3001—4000	1650	1237.50	825	412.50	825
4001 & above	1950	1462.50	975	487.50	975

Boats taking Bunkers or Stores only.

Net Tonnage.	Drachmas.
Up to 500	600
501-1,000	1,000
1,001-2,000	1,200
2,001-5,000	1,300
5,001 and above	1,400

Warships.

Displacement.	Drachmas.
Up to 1,000	600
1,001-2,000	1,400
2,001-3,000	1,800
3,001-4,000	2,200
4,001-10,000	2,600
10 001-20,000	3,000
20,001 and above	3,500

N.B.—The Pilotage Rates of the Port of Piraeus are subject to 10% increase.

Tugs are available at Piraeus, and those stationed there may undertake services at any Greek port on request, and the following rates are charged:—

TOWAGE CHARGES.

For Steamers. Optional, on private agreement (there is not any tariff).

	In the Port	In the Outer Harbour
For Lighters up to 100 tons	45	65
,, over 100 tons	60	80
Sailing Vessels up to 100 tons	45	65
,, ,, 101-150 tons	60	80
,, ,, 151-200 ,,	75	110
,, ,, 201-250 ,,	125	155
,, ,, 251-300 ,,	150	200
,, ,, 301-350 ,,	200	250
,, ,, 351-400 ,,	200	300
,, ,, 401-500 ,,	500	750
,, over 500 tons—increase of 25 per cent.		

Towage is compulsory and such service is undertaken by private concerns.

Sanitary charges have to be paid to the harbour master on the basis of the following schedule:—

SANITARY TAXES.

(A) Steamships.

Net Tonnage of Ships.	Ships trading between Greek Ports. Drachmas Paper.	Ships travelling between Foreign Ports. Drachmas paper.
21—200 ...	50.00	100.00
201—2000 ...	100.00	200.00
2001 & upwards	200.00	300.00

Such charges are valid for 30 days.
The ships paying the following rates in advance are exempted for 12 months to pay any sanitary tax:

21—200 ...	300.00	500.00
201—2000 ...	500.00	1000.00
2001 & upwards	1000.00	2000.00

(B) Sailing Vessels.

21—200 ...	50.00	100.00
201 & upwards	100.00	200.00

Such charges are valid for three months.
The sailing vessels paying the following rates in advance are exempted for 12 months to pay any sanitary tax:

21—200 ...	150.00	300.00
201 & upwards	500.00	600.00

All these charges are subject to an increase of 40 per cent.

Deratisation.

Net Tonnage of Ships.	Drachmas Paper.
11—100	150.00
101—200	220.00
201—400	300.00
401—1000	470.00

For each additional 1000 tons or fraction Drachmas 550.00.
The surgeon visit on board of steamers is paid at the rate of 60 Drachmas.
Quay charges are collected on the basis of Drachmas 0.12894 per ton and per 24 hours, and after the 7th day such tax is doubled.
Anchorage charges are collected on the basis of Drachmas 0.064479 per ton and day.

The harbour of Piraeus consists at present of the outer harbour, central harbour and the inner harbour, besides what is known as the harbour of Piraeus in the true meaning of the word. There is, furthermore, the Standard Oil and the Royal Dutch Oil facilities at Drapetzona Bay, where tankers can unload directly from the ship's tanks into the coastwise tanker, and the St. George's Bay quayage, West of Drapetzona, in which district several industries are developing from day to day.

Warehouses in the Port of Piraeus.

Until 1923 the harbour of Piraeus included what is called at present the inner harbour, the present quays on the town waterfront used for the coastwise trade and passenger traffic, and finally the Customs House quays, until the entry into what is called the central harbour, averaging a total of not more than 1,500 metres. In 1923 the best known of the world's dock engineering firms were invited to submit projects and offers to undertake the enlargement and the improvement of the harbour of Piraeus.

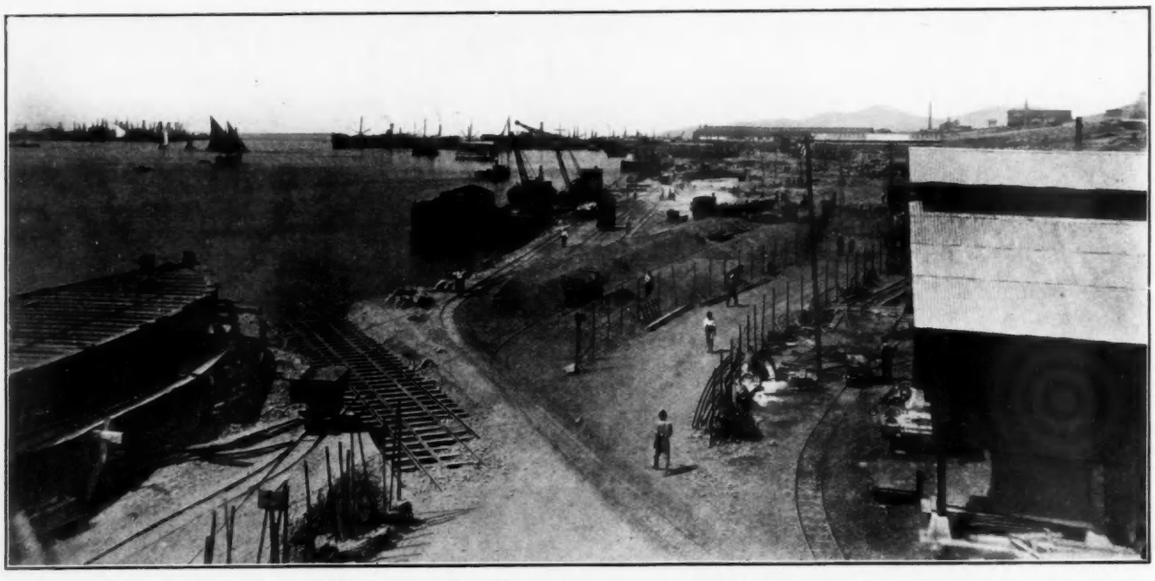
After careful consideration the Committee which had been appointed by the Government to examine these projects came to the conclusion to undertake only a certain portion of the enlargement since no agreement could have been reached among

The Port of Piraeus.

View of Blockyard, showing blocks which have already been constructed.

Another View of the Blockyard.

The Harbour of Piraeus—continued.



Outer Harbour of the Port of Piraeus. The View also shows Dock under construction which, when completed, will be used for the Coal Trade.

its members on the question as to whether it was or was not much more advantageous to leave the existing jetty at he entrance of the inner harbour as it is at present, and this problem has been the object of active polemics between the various interested parties, so that it has been decided to ask the advice of a well-known harbour engineer on the subject.

New Works Completed.

The new enlargements which have been completed and which were completed during 1930, included (1) a quay from A to B measuring 778 metres in length, at a depth of 10 metres, to be used for coal and construction material trades, and to be fitted with two electric coal elevators having a power of 150 tons per hour each (each elevator has a length of 100 metres), ordered from the Stabilimento Teconico Triestino at Trieste; (2) a trapesoidal mole between the two existing dry docks (c) and the entry of the central port (F) each side of the mole measuring 171 metres (C—D) respectively 71.50 (D—E) and 179.50 (E—F), that is a total of 422 metres of quayage at 10 metres depth, and to be used for general cargo, while it is considered that the northern side of the mole might be used as a maritime passengers' station; (3) two quays (F—G) measuring 532 metres, with a depth of 10 metres, and (G—H) 348.50 metres long, with a depth of 9 metres, to be used for general cargo trade. On these two quays eight two-storey warehouses are to be provided, and while five have been completed already, the other three are to be built as soon as the existing railway station of Piraeus is removed elsewhere. These warehouses are placed on the sea-water front. A double track railway line, which has been laid down on the quay between the warehouses and the sea connects this part of the harbour with both railways leaving from Piraeus to the interior of the country. Such warehouses have been built in concrete and in such a way that goods can be unloaded directly from the ship's holds into the second floor. The warehouses have the following area and capacity:—

NUMBER OF WAREHOUSES.

	1	2	3	4	5	Total
Area—						
1st Floor—sq. metres	2740	2295	1910	2060	1870	10875
2nd Floor ditto	2350	1890	1630	1730	1560	9160
Total	5090	4185	3540	3790	3430	20035
Capacity—						
1st Floor—tons ...	8220	6885	5730	6180	5610	32625
2nd Floor ditto ...	4700	3780	3260	3460	3120	18320
Total	12920	10665	8990	9640	8730	50945

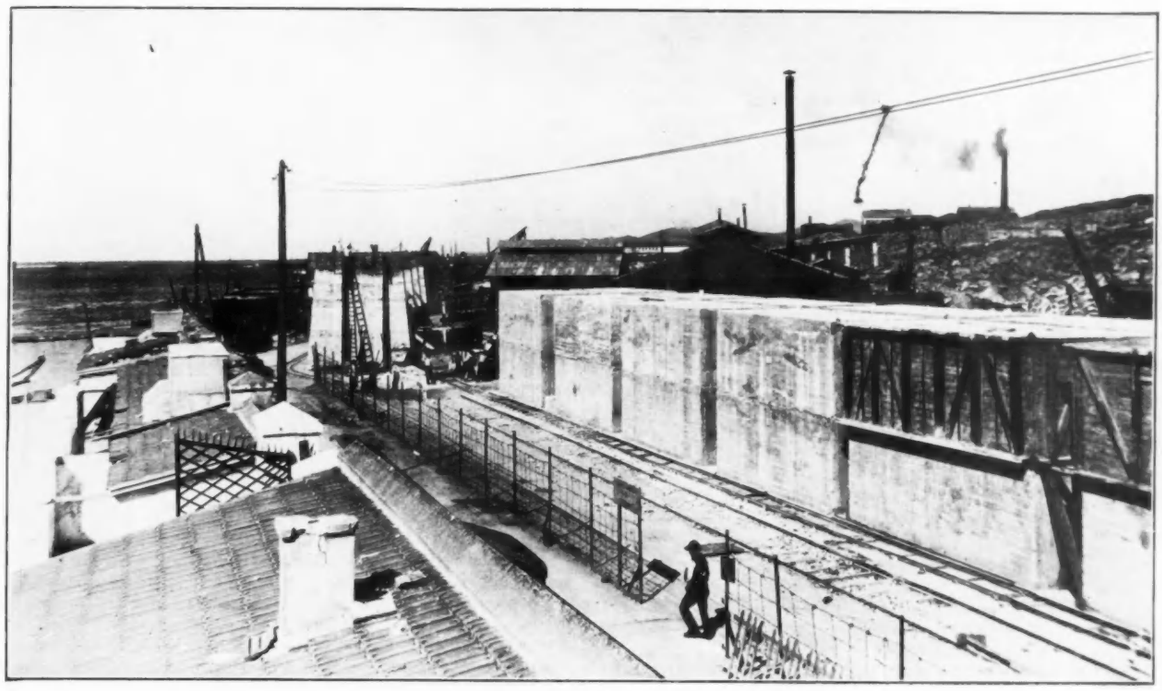
Each warehouse is provided with interior electric elevators of 2 tons capacity, and on the northern side of each warehouse shutes for shifting bags or boxes into carriages are fitted. A new range of six-floor warehouses should be built (according to the project which has been prepared) behind those warehouses which have already been completed, and they should be used as general bonded stores.

The construction of this first part of the harbour improvements at Piraeus undoubtedly represents the last word of shipping engineering, as can be seen from the fact that an entirely new type of section has been adopted for the construction of the whole quayage. At first a trial had been made to adopt an entirely vertical section, but owing to the fact that some movements have been noticed the section has been strengthened, using, however, the same blocks which were prepared for the first section. The blocks have been built in a blockyard and carried to the place by means of a floating crane of 100 tons. Each block is composed of 224 kg. of cement, 106 kg. of lime, 470 kg. of santorino earth (china clay), and 470 lt. of sand. The warehouses have been built in concrete with foundations on "radier general." The lower floor can carry 3 tons

New Quay at the Central Harbour.

per square metre and the upper floor 2 tons per square metre. Electric lighting is provided in the interior of the warehouses. This new part of the harbour, which is to form the free zone of the port of Piraeus, is fitted with 17 electric portal travelling cranes of 2 tons capacity each, with 4 electric portal travelling cranes of 5 tons each, to be delivered shortly by an Austrian firm, and finally the previously referred to 2 electric coal elevators of 150 tons each. The main characteristics of these cranes are as follows:—Total lift, 32 metres; rake of the crane, 10 metres; speed of lifting, 60 metres per minute; contraction of arm, 15 seconds; complete revolution, 40 seconds; transport of crane on rails, 10 metres per minute. Each of the eight warehouses above referred to is to be served by two cranes of 2 tons, and every two of them by a crane of 5 tons, which may also work at 2 tons capacity. In connection with these cranes it ought to be noted that they have horizontal luffing motion gears. The total of the works which have thus been completed includes quayage at a depth of 10 metres of 1,673.45; at 9 metres, 602.55; and at 8 metres, 369.20, making a total of 2,645.20 metres.

The Port of Piraeus.



Another View of the Blockyard.

Inner Harbour of the Port of Piraeus, showing Coal Lighters.

The Harbour of Piraeus—continued.

Such works include, furthermore, the construction of a small dock right at the entry to the port of Piraeus, measuring 498 metres in length for the use of lighters, the number of which, as I have mentioned, should be decreased, in order to clear up the inner harbour. The old quays, which are used at present for the liners and coastwise services, and where the office of the harbour master and the Customs House is situated, continue to be maintained in the present efficiency pending the harbour improvement and enlargements being resumed in this section, but where the Harbour Board seems to have concentrated its attention is in the development of the facilities of the St. George's Bay, where there has already been built a breakwater of 396 metres length, the section of which has been built according to wholly vertical elevation, and in this regard it should be noted that there is a project for the construction of further 2,110 metres of quayage in this bay. The harbour of St. George is to be connected to Piraeus and Athens by means of the electric railway which now connects Piraeus to Athens. When all the projected works are completed the harbour facilities at Piraeus will include the following quayage:—At the disposal of coal trade, 450 metres; cereals, 150 metres; building material, 340 metres; passenger and liners trade, 4,798 metres; sailing ships, 200 metres; lighters dock, 498 metres; Bay of St. George's, 2,110 metres; various small docks, 114 metres; making a total of 8,660 metres. In addition to these facilities there are the oil tanks of the Standard Oil Co. and of the Royal Dutch, including: Royal Dutch, 12 tanks; Standard Oil, 10 tanks. Oil can be unloaded at the speed of 1,000 tons daily.

For the repair of ships there are at Piraeus two dry docks of the following dimensions:—Dry Dock No. 1 (Harbour Board): 460-ft. long, 69-ft. 9-in. wide at entrance, 29-ft. 2-in. depth on sill. Dry Dock No. 2 (Harbour Board): 320-ft. long, 51-ft. wide at entrance, 25-ft. 1-in. depth on sill. Additional facilities are available at the Salamis Bay (7 miles east from Piraeus), where the Naval Arsenal of the Greek Republic is situated.

Some floating cranes are also available at Piraeus with a capacity from 20 to 60 tons.

The growing importance of the harbour of Piraeus and the fact that the problem which Greece has to face is the settling of the population which came from Asia Minor, and consequently must favour the development of buildings, etc., and finally the fact that the transfer of this population has decreased the requirements of Anatolia, but has increased those of Greece, are all factors encouraging the Greek Government to consider further improvements in the harbour of Piraeus. As a matter of fact, I understand that a project has been prepared with a view to the construction of a silo with a capacity of 25,000 tons and with an unloading capacity of 300 tons per hour, to be situated in the territory of the inner harbour, and as enlargements are to be carried on it cannot be excluded that sooner or later, if traffic should increase, the Harbour Board, which has just been created, might have to face the question of enlarging the Piraeus Port facilities outside the harbour itself in Phaleron Bay or on the west of St. George's Bay.

Are these expectations to be met? As I pointed out, since 1924 the situation has much changed in the Near East, and this can easily be seen from the fact that the number of foreign lines calling at Piraeus to and from the Near East has greatly increased since 1918, as it appears from the following schedule:

Callings of Foreign Lines at the Harbour of Piraeus.

	1930	1918
British flag—		
Johnston Line	26	12
Furness Line	52	26
Ellerman Line	52	52
Cunard Line	52	52
Mediterranean Line	52	—
Total	234	142
German flag—		
Deutsche Levant Line ...	127	100
French flag—		
Messageries Maritime ...	52	36
Cie. Paquet	52	36
Cie. Fraissinet	26	12
Total	130	84
Italian flag—		
Lloyd Triestino	364	348
Puglia Line	104	88
San Marco Line	52	52
Sitmar Line	78	72
Cià. Genovese di Navigazime	26	—
Total	624	560

From the above-mentioned figures the position of the various lines is made clear, also the importance the Italian Mercantile Marine has acquired through the services of the Lloyd Triestino in the Levant. This Italian line now connects through its organisation the harbour of Piraeus to the main ports of the Adriatic, Aegean Sea, Egypt and the Black Sea, thus rendering possible the concentration in this port of that transit trade which Piraeus has diverted from Istamboul. This progress has continued even during the first six months of 1930, taking into consideration the larger number of ships calling at Piraeus to and from the Near East countries, as it appears from the following figures:—

	1930		1929	
	No.	Net. Reg. Tons	No.	Net. Reg. Tons
Bulgaria ...	29	18,414	15	11,477
Egypt ...	129	221,717	145	218,440
Roumania ...	52	101,526	56	82,908
Turkey ...	123	241,046	144	217,031

It should be noted that many liners are carrying here goods from Western European ports, and these goods are afterwards transhipped to Black Sea or other Near Eastern ports by means of other ships which are calling here or are sailing from Piraeus, and such traffic is now averaging about 300,000 tons yearly, that is, about 15 per cent. of the total import and export shipping, showing an increase in respect of the previous years. Whether such trade will continue to increase or not it will all depend upon the speed which will be followed in the organisation of the port, as there is no doubt that the whole future of the harbour of Piraeus exactly lies on the elimination of present absolute lack of efficiency in the organisation, and nobody knows what would occur if any other Near Eastern harbour would put up quickly a better organisation than Piraeus has just at present.

The project of increasing transit trade from Central Europe by rail does not appear to have any foundation, since railway facilities are rather poor, and even when trains from the Jugoslavia frontier will no longer go to Salonica, when the Greek State Railway Administration shall have replaced the present rails, renewed the signal systems, trains will not reach a higher speed than 60 km. per hour, so that from the Grecian-Jugoslavian frontier to Piraeus will still be a trip of 10 hours.

Furthermore, it should not be forgotten that the Greek Government is now spending much money for the enlargement of the harbour of Salonica, and since Salonica is nearer to the frontier than Piraeus, it can scarcely be understood how such a port can face the competition of Salonica without obtaining from the Government a special reduced railway tariff which would necessarily damage the harbour of Salonica and consequently render useless the money which the Government is now spending on it. It is certain, however, that also in connection with the Near Eastern ports it may be noticed the same competition as on the Western European Harbour in regard to transit trade. As a matter of fact, in correspondence to this revival of activity at the main harbour of Greece it may be remarked a similar activity in the Roumanian harbours. Quite recently I was told that the Roumanian State Shipping Service is taking, at present, goods or passengers with direct bill of lading from any Near Eastern port to any Central European station by way of Galatz or Braila. Greeks seem to follow this idea with the keenest interest, as they feel that it may influence the development of shipping at Piraeus, and therefore they may, as Engineer Professor Coronis, General Manager of the Greek State Railways, told me, put into effect at least an old project of favouring the transit trade of passengers from Central Europe to Egypt and the Near East via Piraeus by means of rapid steamship connections between Piraeus and Alexandria, since it is felt that the distance between London and Alexandria via Holland, Germany, Austria, Jugoslavia and Greece is shorter than the route via Paris and Marseilles, and in any case the crossing of a shorter sea route is always preferred, it is stated, than a longer sea trip.

Whether such project may be put into effect it will much depend whether Premier Venizelos will accept the suggestions which has been made to him to subvention the Greek Mercantile Marine.

Leaving words aside and setting down to facts, there is no doubt that all these ideas will not turn into anything unless, as it has already been said, Piraeus has a true harbour organisation. The law for this purpose has been made, some men of goodwill and experience are at work; let us see how they will meet the mission entrusted to them. This is, perhaps, the only point upon which depends the future of Piraeus Harbour.

Ship-to-shore Telephone popular with Home-coming Crews.

Telephones for the use of cargo vessels putting in at North Shields have been installed by the Tyne Improvement Commissioners.

A lighter has been equipped with connecting cables and portable telephones to connect ships to the local exchange through one of seven transfer stations in various parts of the docks.

The fee for these facilities is only two shillings a day, while no charge is made for local calls. Trunk calls are charged at the usual rates.

In addition to being used extensively for business talks between captains and ship-owners, the new facilities are proving popular among the crews who are able to ring up their relations at home instead of writing letters.

Scottish Harbour Notes.

Greenock Harbour Representatives.

SPEAKING at the recently held annual meeting of Greenock Chamber of Commerce, the President (Mr. D. M. Ferguson) said that in the past ratepayers had good reason to complain of the neglect of necessary repairs and the need for improved facilities at the local harbour. Thanks, however, to the present activities of the town's representatives on the local Harbour Board—who rightly hold the balance of power between the bondholders and the ratepayers' representatives—arrears of maintenance were now being undertaken, and the new economy schemes introduced during recent years were now bearing definite fruit. Mr. Ferguson added, however, that the restrictions of the 1913 Act (which allowed only £1,000 per annum to be placed to reserve and which limited the total reserve to £10,000) were certainly restricting developments. That fund had never been allowed to grow owing to the necessary raids to prevent loss to the town, but, in view of the fact that the 1913 powers were now practically exhausted, it was hoped that when further powers were sought greater freedom would be given to the Harbour Board in this respect.

Possibilities of Development at Greenock.

Proceeding, Mr. Ferguson expressed the view that, despite the difficulties of the past, he was convinced that the port of Greenock had still great possibilities of development, because they had a wonderful quay frontage and valuable sites in the vicinity of the docks which must in time attract further industries to the town. After emphasising the importance of the Garvel Dry Dock alterations, Mr. Ferguson added that they were also well situated for the development of oil bunkering business. " Some of us think," he commented in this direction, " that here there was a big chance lost which might easily have been taken, and this illustrates one of the difficulties with which we are faced in the Harbour Trust with its different interests. Personally, I feel that it was a great loss to the town that we did not have oil tanks at our port. I am sure that the decision of the Harbour Trust to proceed with the alteration of the present obsolete entrance to the Garvel Dry Dock is a great step towards bringing our port up-to-date, and when completed it will be a great benefit to the Harbour Trust and to the town."

Improvements at Anstruther.

Recently Mr. Gordon Nicol (Consulting Engineer to the Scottish Fishery Board) met the members of Anstruther Union Harbour Commissioners on the question of the improvements to be carried out at the West Pier, and the outcome of that meeting was that a misunderstanding that existed between Mr. Nicol and the Commissioners regarding the proposed widening of the West Pier was cleared up. Mr. Nicol did not favour any widening on the outside, and it was decided to proceed to get specifications for the widening on the inside under the conditions of the £10,500 grant and to erect a parapet on the seaward side of the pier. He recognised (he said) Anstruther as the centre of the herring fishing industry south of Peterhead and Fraserburgh, and felt that they had a great field for activity. In the year 1865 operations were begun at the harbour at a cost of £80,000, and the work was completed in the year 1877, and since that time nothing has been done to improve the harbour. It was still a dry harbour, and he (Mr. Nicol) thought it was time something was done. They had made up their minds to be determined to get what they wanted and they would succeed.

Proposed Reconstruction of Pier at Oban.

Oban Town Council have considered a report submitted by the Burgh Surveyor with regard to the reconstruction of the South Pier with ferro-concrete in place of timber. It was pointed out that the cost would be £5,000 instead of £4,500 for timber; the duration of the work would be six months instead of three; the number of men employed would be twenty against ten; and the unskilled wage bill £1,200, as against £500. The Town Council was unanimous that it would be advisable to have the reconstruction carried out with ferro-concrete, and the Town Clerk was instructed to communicate with the Unemployment Grants Committee, pointing out the advantage that would be gained from the point of view of duration of the work and the number of men who could be employed.

Garlieston Harbour in safe condition.

It is reported that Garlieston Harbour—in the South of Scotland—is now in a safer condition than it has been for years, and that no heavy expenditure on the harbour is meantime anticipated. These facts were revealed in the annual report on the harbour, which has just been submitted by the chairman and subscribers of the Harbour Commissioners. The breakwater has, so far, stood the storms of another year without sustaining any apparent damage. Some time ago the perch was washed down, but the Committee are waiting on a favourable opportunity to put it up again. Expenditure during the last year has been comparatively heavy, but the Commissioners are left with a balance in hand of £33. There was a decrease of 1,086 tons of cargo received. The total expenditure during the past year amounted to £358. There are no debts in connection with the harbour, and the total amount of property funds (exclusive of the harbour itself) amount to £1,900.

Constructional Works at Stornoway progressing satisfactorily.

At a recently held meeting of Stornoway Harbour Commissioners great satisfaction was expressed with the progress being made with the works at present under construction at the North Beach Quay, and consideration was given as to what form the work should take under the second instalment of scheme "A"—a draft plan for the proposed alterations to Cromwell Street Quay and No. 1 Wharf being submitted. After careful consideration it was agreed that Messrs. Henderson and Nicol, C.E. (Aberdeen), should be asked to prepare reports and plans necessary for application to the Treasury for a grant to carry out the proposed work. At the same meeting a report was given as to the repairs necessary on the coal store in Quay Street, and it was agreed to carry out such repairs according to an estimate submitted.

Wick Harbour Trustees and Government Loan.

Questions were asked at a recent meeting of Wick Harbour Trustees as to how matters now stood with regard to the loan which has been sanctioned by the Government. This loan (which has been guaranteed by Wick Town Council) is for £23,000, and is to be used for deepening and improving the local harbour, which in recent years had been increasingly used during the summer herring fishing season, when there is considerable congestion at the local harbour. It was understood that the Provisional Order for carrying out this scheme would shortly get through Parliament, and that there was every expectation that this would be started immediately the weather was favourable. One of the members stated that it was two years since this scheme had originally been mooted, and it was to be regretted that nothing had been done so far. "At the present time," this speaker observed, " the fishing is backward and there is much unemployment in the town, and that work should certainly be going ahead as quickly as possible."

Increase in Australian Trade at Glasgow.

Mr. Harold M. Ford, commercial manager of the Clyde Navigation Trust, delivered an interesting address at a recent meeting of the Glasgow Publicity Club when he gave some illuminating information relative to the imports and exports of the Glasgow Harbour. In the course of his observations Mr. Ford emphasised the point that the progress in connection with Australian trade was being steadily maintained, and he pointed out that the increase in this trade represented £1,000,000. It was also made quite clear by Mr. Ford that a great deal of enterprise and initiative is being shown in stimulating business at the Glasgow Harbour, and that satisfactory and substantial results are being achieved in many directions.

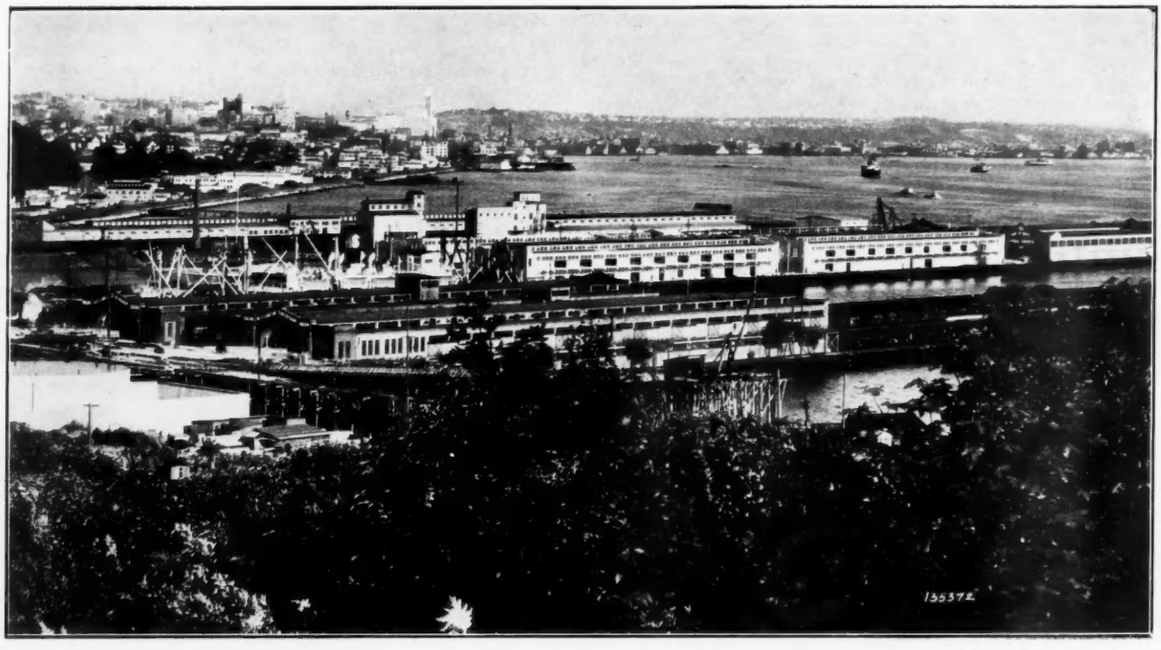
Bremen's Seagoing Shipping Traffic in December, 1930.

Bremen sea-going traffic for all arrivals on the Weser for Bremen account in December totalled 758,372 net registered tons, and thus exceeded the previous month by 48,673, or 7 per cent., but was less than in December of the previous year by 38,290 net registered tons, or 5 per cent. Bremen City and the other Weser ports, with the exception of Bremerhaven, participated in this decrease. Bremerhaven showed an increase of approximately 25,000 net registered tons, or 14 per cent.

While Bremen City had a loss of over 2 per cent. in arrivals during the past year, all the other Weser ports were able to show increases, with the exception of Brake. However, in departures Brake also showed larger traffic than in 1929. This was the case with all other Weser ports, excepting Bremen City and Bremerhaven. Bremerhaven's decrease was less than the increase in her arrivals. The increased percentage in Nordenham was considerable, amounting to 25 per cent. in arrivals and 30 per cent. in clearances.

Seaborne goods traffic of the five most important Weser ports decreased further in December, 1930, as compared with the previous month. Imports and exports together amounted to only 521,700 tons and were thus 21,300 tons, or 4 per cent. less than in November, 1930, and 198,900 tons, or 28 per cent. less than in December, 1929. Imports, with 357,000 tons showed a falling-off of 10,000 tons and 198,100 tons respectively. Exports in December, 1930, with 164,700 tons, were weaker than in November, 1930, by 11,300 tons, and compared with December 1929, by 800 tons.

The Port of Seattle.



New Transit Sheds on Pier 40 nearly completed. Pier 41 is seen beyond.

Passenger Terminal Building with Ship in South Berth.

Two Recent Port of Seattle Improvements.

IN order to care for the steadily growing commerce of Seattle the Port Commission have just completed two noteworthy improvements, the one to facilitate the handling of the great quantities of tinned salmon from Alaska and the other to care for the increasing passenger travel between Seattle and the neighbouring Canadian cities of Victoria and Vancouver. Four two-storey transit sheds with a total floor area of three hundred thousand square feet have been constructed to serve the tinned salmon industry and a modern passenger terminal has been provided for the use of the travelling public patronizing the Canadian Pacific Railway coastal ships.

The Salmon Terminal on Pier 40.

The buildings of the salmon terminal are on Pier 40, Smith's Cove Terminal, occupying what was open wharf area. Pier 40 is 310-ft. in width and 2,530-ft in length. The centre of the pier is filled ground retained between timber sheet pile bulkheads 154-ft. apart. There is a wharf apron on either side of the central filled portion consisting of creosoted fir piles supporting timber caps, stringers and deck. At the time this pier was put into operation, 1914, there seemed to be a real need for open wharf space at this terminal, served by an overhead travelling gantry crane, for the assembly of lumber cargoes from inland mills. Some use for the pier for this purpose did develop, but the real utility of this open wharf space was realized during and immediately after the war, for the shipment of heavy freight to Siberia and Japan and the receipt of vegetable oils from Manchuria. For several years this space was invaluable to the port and made possible the shipment of enormous cargoes of essential supplies through Seattle. With changing conditions, however, was developed less and less need of open space, such as was provided on this pier, until during the past five years it has remained practically vacant.

When the demand arose for transit shed space in which to concentrate a million or more cases of tinned salmon, the logical situation for the necessary buildings seemed to be on this open wharf space of Pier 40. Here there was already provided the dredged channels on either side of the pier, the railroad tracks and roadway, the rip-rap protected slopes outside the bulkheads and the creosoted timber piling to support the wharf aprons. An under-water examination by a diver of all the piling showed the satisfactory result that less than four per cent. of the piles, after fifteen years of service in teredo infested water, were seriously enough attacked to require replacement. The timber deck, however, including caps, stringers and planking, had to be entirely renewed on account of decay. An interesting fact that developed in this connection was that the timber on the side of the pier where the vegetable oils had been handled, owing to spilling of oil on the timbers, was in a very much better condition than on the other side of the pier. A distinct preservative effect on the timber, brought about by the casual application of vegetable oils, was shown very clearly.

Construction of New Transit Sheds.

The new transit sheds are of heavy timber construction, with the columns that carry the second floor and roof supported on concrete footings. Each of the four sheds is 90-ft. wide and 420-ft. long and two storeys in height. There are two rows of interior columns, spaced 30-ft. apart with the columns 20-ft. apart in the rows, giving floor panels 30-ft. by 20-ft. Each column in the first storey is made up of three timbers, one 10-in. by 10-in., and two 8-in. by 6-in., all bolted and keyed together to form an H-section. The centre stick extends upwards to carry the roof girders. To support the live load of three hundred pounds per square foot and the dead load of the second floor itself, spanning the 30-ft. there were required two timbers, side by side, each 16-in. by 36-in. in cross-section. The floor joists, spanning the 20-ft. width of floor panel, are 6-in. by 16-in., spaced about 27-in. on centres.

The ground floor decking, where the floor is supported on piling consists of fir planking 4-in. by 12-in., and back of the bulkhead a concrete slab deposited on the filled ground. The decking of the second floor is of 4-in. by 8-in. fir, and on both the ground and second floors the runways are paved with asphalt wearing surface and in the piling areas with Port Orford cedar planking on account of its toughness and durability.

The buildings are thoroughly braced by knee braces in the transverse bents and by diagonal braces in the planes of the walls.

Ample daylight is supplied by continuous windows, in both storeys, along both long sides of each building over the doors. The second storeys are given additional light by continuous windows along both sides of the raised centre over a distance of one-third of the roof. At night excellent illumination is provided by a drop light at the centre of every 20-ft. by 30-ft. panel. Electric lights are also provided outside over every door.

The outside walls of the buildings are of substantial timber studs and girts, covered with corrugated galvanized commercially pure iron.

On the waterway sides of the buildings, in both storeys, there is a door in every alternate bay. On the depressed track side there is the same spacing of doors in the lower storey. In general the doors are of wood, covered on the outside with galvanized iron, and hung as sliding doors.

The four buildings are arranged in pairs, two on either side of the pier, with a depressed space 72-ft. wide along the centre of the pier. This depressed space contains four railway tracks and a concrete roadway, with two tracks on either side of the roadway. The tracks and roadway are depressed so that the body of a freight car or a motor truck is practically level with the ground floor of the transit shed.

Spanning the tracks and roadway are four covered bridges connecting the opposite buildings at the second storey level. The two buildings on the west side of the pier, as well as the two on the east side are connected in the same way.

For better fire protection, and consequently lower fire insurance rates, the south end wall, as well as a return for 10-ft. along the east and west sides of each building, is of reinforced concrete. The buildings are completely equipped with automatic sprinkler systems, with fire hose connections at frequent intervals. Fire curtains, of heavy wooden construction, extending from the deck level down to high tide level, are spaced at 100-ft. intervals. In addition, the fire curtains between the buildings are protected with lines of sprinklers that can be turned on in case of fire, to form a curtain of water on either side.

A 9-ton freight elevator, with a platform 9-ft. by 32-ft. is installed in each of the buildings on the east side of the pier. In order to facilitate the discharge of freight at the second floor level by means of ships' tackle, there being no cargo cranes, there has been provided for each building two movable platforms at the second floor level. These platforms are supported at the outer end by framed bents that travel on wheels along a rail near the outer edge of the open wharf apron, while the inner end travels on wheels along a rail supported on a timber girder that is carried by the wall columns of the building above the door openings. The platforms can be readily moved along to a point opposite some doorway in the second storey convenient to the hatch of the ship through which the cargo is to be handled.

Throughout the construction of these buildings, by the use of concrete instead of timber where it is in contact with the ground, by covering the runways with asphalt, and in other ways, the studied attempt has been made to obtain structures at low first cost in which the maintenance expense will be negligible for a considerable part of the economical life of the structures.

The arrangement of the buildings themselves, as well as the lay-out of the entire pier, facilitates the economical handling of cargo from and to ship, as well as from and to motor truck and railway car. Within six weeks after the buildings were ready to receive cargo there had been over a million cases of salmon received by ship and about three hundred thousand shipped out by truck and rail and ship.

New Passenger Terminal.

The passenger terminal recently completed for the use of the Canadian Pacific Railway ships plying between Seattle and the Canadian ports of Victoria and Vancouver presented many interesting problems of lay-out and design, as it had to provide for the large crowds of passengers, as well as motor cars, luggage and general freight. Berths for two ships are provided, one at the outer, or west, end of the pier, and the other on the south side, and both berths have to serve with like facility for handling passengers, motor cars, luggage and freight. The necessary separation of the passengers with their hand luggage from the motor cars, heavy luggage and freight is accomplished by placing the passenger accommodations on the second floor and the other facilities on the first floor.

Passengers leave the ship by a gangplank that lands on a platform that is raised and lowered by power to suit the height of the ship's deck with varying stages of the tide. This platform also supports the lower end of an inclined ramp, about 70-ft. long, that is hinge-supported at the lower end of a fixed ramp that conducts the passengers on up to the second floor level. They then pass the immigration inspector and into the customs examination room, for the examination of hand

Two Recent Port of Seattle Improvements—continued.

luggage. Upon passing the customs examination the passengers go out through a door diagonally opposite the one through which they entered, into the main waiting room. Close by, in the north wall of the waiting room, are two pairs of double swinging doors, leading to a sidewalk along which taxis and other motor cars draw up for passengers.

In order to handle the motor cars on and off the ships there are provided two marine-type elevators, one at each berth. These elevators carry the cars from the level of the ship's main deck, from which they pass through a side port, to the level of the wharf. The construction of these elevators is such that they can be quickly converted into inclined ramps and are so used when the stage of the tide permits. The heavy luggage and freight is also handled to and from the ship on two-wheeled trucks by these elevators.

The main waiting room is 80-ft. wide, with an average length of 120-ft. It is well lighted by large windows which, on the water side, look out directly on the ship. The walls of the main waiting room and the customs examination room are panelled with fir ply-wood for a height of 8-ft., and above that with plaster board. The floors are covered with a magnesite composition flooring, laid in the form of dark red flagstones with dark grey joints. The roof trusses are exposed, and the room is open to the roof, with all woodwork stained a driftwood grey. Two stairways lead from the main waiting room to the lower floor and one stairway leads down from the customs examination room to the bonded luggage room.

The building is of substantial timber construction and is supported entirely over the water on creosoted fir piles. The street front is covered with cement plaster on metal lath, and the sides and outer end of the building with galvanised corrugated commercially pure iron.

Motor car service to the second storey level is provided for by a reinforced concrete viaduct along Lenora Street from the top of the bluff east of the waterfront street, over the railroad tracks and lower roadway, and a commodious turning area just to the north of the main waiting room. For cars going aboard ship the entrance to the terminal is on the lower level from the waterfront street, or by means of a ramp inside the building which leads down from the turning area to the lower deck.

An attractive feature of this passenger terminal is a covered overhead walkway on the edge of the roof of the one-storey portion of the building, overlooking the water. From this vantage point one has a fine view of the ships arriving and departing, and also an excellent and comprehensive view of the harbour.

The passenger terminal occupies the south half of a double pier, known as the Lenora Street Pier, down the centre of which runs a depressed roadway and railway spur. On the north side of the pier is a one-storey transit shed that is used for general cargo purposes. The Lenora Street Pier is immediately south of the Bell Street Terminal of the Port of Seattle, and the two together make up the Central Waterfront Terminal, with a frontage along the waterfront street of 1,650-ft. Two viaducts, one along Bell Street and the other along Lenora Street, connect this terminal, over the waterfront railroad tracks and roadways, with the streets on the higher ground that lead directly and by short routes to the centre of the business district of the city.

Notes from the North.

Liverpool Underwriters and Beal Bar.

IN the annual report of the Liverpool Underwriters' Association reference is made to the Beal Bar, River Shannon. Regret is expressed that no improvement in the aids to navigation had yet been effected. An official intimation, however, has been received that it has been decided to proceed with the conversion of the existing light at Kilcredaune to unwatched acetylene. During the year two steamers stranded on Beal Bar.

Speaking at the annual meeting of the Association the president, Mr. Oscar Prentice, expressed the hope that the Government would follow the example of the United States and assist in making our coast line safer for shipping by erecting a much greater number of radio-beacons.

Mersey Coast Erosion.

The serious problem of erosion on the banks of the Mersey near Blundellsands continues to engage attention. The new Alt Catchment Board appointed recently by the Ministry of Agriculture and Fisheries under the provisions of the Land Drainage Act has appointed a committee to prepare a report on what can be done to combat the menace. Sir George Etherton, clerk to the Lancashire County Council, said experts say the cause of the erosion is the changed course of the River Alt. The Alt, which flows through Hightown, formerly had its outlet between Hightown and Hall Road, but now enters the sea at a point between Hall Road and Blundellsands, and since the change much damage has been caused to property. Several attempts have been made to alter the course of the Alt and arrest the erosion without success. The present scheme of tipping a black mixture from a Bootle tin works has, however, proved effective in preventing the breaking away of the coast line and the consequent collapsing of the road and property.

New Ship Canal Dock.

One immediate development following the formation of the Lancashire Steel Corporation and the Wigan Coal Corporation is the provision of extended quayside arrangements, including a new 600-ft. dock and new ships' handling and discharging plant capable of dealing with 4,000 tons per day at the Partington Steel and Iron Works, on the Manchester Ship Canal at Irlam. As a result of this scheme it will now be possible to unload iron ore directly at the works, thus eliminating the extra freightage and time involved in the transport of the ore to the Manchester docks. Preparations for the actual construction are in hand, and it is expected that the work will be started in the near future as soon as the details of the placing of the contracts are completed. The other part of the scheme includes the erection of by-product coke ovens, blast furnaces, open-hearth improvements, and the development of rolling mill plant.

New Dock Bridge.

With reference to the construction of the new bridge over the passage between Collingwood Dock and Stanley Dock, Liverpool, Mr. Norfolk, the engineer to the Mersey Docks and Harbour Board, has reported to the Works Committee of the Board that the flat lock beneath is no longer used. He suggests that it might usefully be permanently closed and utilised advantageously to strengthen the foundations of the new bridge. The Works Committee has adopted a resolution authorising the engineer to permanently close the lock under the roadway and to fill in or use it in such a manner as may be required in connection with the foundations of the new Stanley Dock Bridge.

Barmouth Sea Defences.

One hundred and thirty thousand pounds is being spent by the Barmouth Council on sea defence works. In the past thirty years the sea has encroached in places to the extent of over 150-ft., and in the area north of the railway station about 10 acres of land have been lost. This erosion has been taking place along a strip of shore vital to Barmouth, because it is virtually all there is of Barmouth up to the mountain barrier that is so splendidly protective eastward. Until now, two or three short lengths of sea wall have afforded the only artificial protection from the sea's onslaughts, and the shingle edge of Barmouth's golden sands was being gradually forced toward the railway and the town. The existing defences being incomplete and tentative, were overwhelmed in heavy weather. The new works will consist of a sloping apron wall of concrete faced with Welsh granite, the lower portion being stepped and the "toe" carried into the beach to a depth of 7-ft. Below this level concrete piles will be driven at intervals of 10-ft. to a depth of about 23-ft. below the beach. The backing or filling behind this will consist of sand to a level of about 8-ft. above high-water mark. Above this filling and keyed into the sea wall there will be a promenade 17-ft. wide. This will be divided from a carriageway 25-ft. wide by a protective wall 3-ft. across, which is intended as a base for seating and as a screen to trap blown sand.

Berthing Notices.

Arising out of the recent casual labour inquiry at Liverpool, the Mersey Docks and Harbour Board are to provide notice boards at various places along the line of docks which will indicate where an incoming vessel is to be berthed. This is to assist dock labourers in determining where they are most likely to secure employment at the docks. They will be revised daily. The Dock Board traffic offices where the notices will be posted, are situated at different points along the line of docks. At present "dockers' stands"—the popular term for a queue of dock labourers—are not formed up at any definite point.

The Port of Seattle.

Lenora Street Pier and Viaduct leading to turning area.

Interior View of New Transit Shed—Ground Floor.

Notes from the North—continued.

Leasowe Embankment.

The repair and maintenance of the Leasowe Embankment cost the Wallasey Embankment Commissioners £4,978 last year. The Commissioners' total expenditure was £8,542, which included also £1,064 on principal of the loan of £10,000, £247 in interest on loans, £1,083 for salaries, office and miscellaneous expenses, and £800 for the quinquennial survey. The receipts amounted to £11,366. A balance of £4,191 was brought forward and a balance was carried forward of £7,015. The rate or assessment made six months ago amounted to £11,279, of which sum £6,327 was contributed by the Mersey Docks and Harbour Board on their lands in the districts concerned.

New Ship Canal Chairman.

Mr. Alfred Watkin, the new chairman of the Manchester Ship Canal Co., has been a director since January, 1913, and chairman of the Finance Committee since 1916. He is a director of Martins Bank, London, and Lancashire Insurance Company, chairman of Lloyd's Packing Warehouses, and a director of Manchester Liners.

New Sea Defence Works.

A Ministry of Health Inquiry has been held at Thornton Cleveleys to inquire into the Council's application for £15,600 for sea defence work. The works proposed by the Council comprise (1) the construction of a sea wall and footpath on a portion of the frontage of the Rossall Beach Estate, at present liable to flooding at exceptional tides; (2) reconstruction of the groynes to assist the collection of shingle on the foreshore so as to form an additional protection from the sea; (3) the construction of a roadway along the sea frontage; (4) the laying of a main sewer through the roadway to serve the property and building land adjacent to the sea wall. The Council proposes to secure the control of the whole of the foreshore and promenade within their area.

Wallasey—Liverpool Ferry.

No decision has yet been reached by the Wallasey Corporation in regard to the proposal to build a new Wallasey passenger steamer in place of the "Royal Iris," of Zeebrugge fame. The Unemployment Grants Committee have so far declined to help, and if they cannot be prevailed upon to do so, the Ferries Committee will be faced with the problem of deciding whether to bear the whole burden themselves—the probable cost of a new boat being put at £43,000—or of reconditioning and re-boilering the "Royal Iris," as required by the Board of Trade if the vessel is to be again licensed for the service. The cost of this work is estimated at £17,500, and the "Royal Iris" would then be good for a few more years' service. There is thus no question at present of tenders for a new boat being invited.

Lighthouse Collapses.

A 60-ft. lighthouse which has stood at the end of Harrington Pier, near Whitehaven, Cumberland, since 1848, collapsed recently and fell into the sea. There was no one about when the lighthouse collapsed, and very little damage was done to the wall of the pier. For 82 years the lighthouse has cast its beams 11 miles over the Firth, and its light must have helped many ships fleeing before the south-westerly gales to seek shelter at Maryport. Years ago Harrington was a very important port, from which much of the coal of the West Cumberland pits was shipped, in addition to the steel rails and other railway material produced by the Moss Bay Company, Cammell Laird and Company, and later by the Workington Iron and Steel Company. When the United Steel Company was formed the new Prince of Wales Dock was built at Workington, and the need for the harbour at Harrington, two miles away, was not felt so greatly, so that on December 6th, 1929, the port was closed and the lighthouse ceased to function.

Suez Canal Tolls.

It is a long way from Suez to Birkenhead, but Merseyside interests are perturbed by the high rate of canal tolls. At Birkenhead Chamber of Commerce, which decided to support the Liverpool Shipowners' Association in their request for a revision of the Suez Canal rates, Mr. Bellhouse contended that Europe's share in the Eastern trade had dropped through the excessive rates charged; a substantial reduction in the rates of the Suez Canal would improve the Eastern trade for European countries. The Suez Canal had been making big profits and paying big dividends. Although this clashed with the Chamber's campaign for economy, because the British Government received nearly one-half of the dividends paid by the Suez Canal Company, he thought all would agree that the Liverpool Shipowners' Association had a very good case indeed, and it was time that the dues on the Suez Canal were lowered, especially as it meant the diversion of a considerable amount of traffic through the Panama Canal. If a reduction were made in the dues, it was probable that some of the loss would be made up by the increased traffic using the Suez Canal.

Future of Wapping Dock.

Wapping Dock, Liverpool, has been named as the site for the proposed new Liverpool fish markets, concerning which there is an acute division of opinion in municipal circles. It is understood that the Mersey Docks and Harbour Board is prepared to accommodate the fish trade at the Wapping Dock, which is not now one of the busy docks of the port, but this site is held by the trade to be quite unsuitable. Those members of the City Council who are disposed to utilise Wapping Dock point out that a large fleet of trawlers and other fishing craft could be berthed there, and close by wholesale and retail markets could be provided. It would be possible, it is believed, to meet the trawler owners in the matter of dues, and so help Liverpool to regain its old position as one of the leading fishing ports of the West Coast. On the other hand, Mr. W. H. Malin, president of the Fish Merchants' Association, states: "Wapping Dock is absolutely useless from our point of view, and as for the suggestion that it might bring back the trawler fishing traffic to Liverpool, I think it is absurd. The bulk of Liverpool's fish comes by rail from established fishing ports, and it always will. Was it likely that the L.M.S. Railway Company, having spent thousands of pounds in perfecting their arrangements at Fleetwood, would sink further capital at Liverpool in the hope that they might attract trade away from their own concern? At the moment eight or nine steam trawlers and half-a-dozen sailing vessels come into Liverpool with supplies. As an experiment two or three trawlers from another port came here with their catch, but found that the port charges alone were £100 more than at their own port."

Manchester Ship Canal.

Manchester Ship Canal Company have recommended dividends at the following rates: 3½ per cent. on the Manchester Ship Canal Corporation preference stock; 4 per cent. on the preference shares held by the public; 2 per cent. on the ordinary shares. The directors have placed £7,000 to the reserve for contingencies and repairs, and £28,190 has been carried forward. The results have been better than it seemed safe to expect, in view of the fact that the traffic revenue from the main waterway at £1,395,567 was £133,217 less than in 1929, or about £93,000 less if the saving in rates due to the derating law and certain economies were set against the concessions to users of the Canal, which the company had to make in consideration of its rating privilege. For the previous two years no allocations had been made to the reserve for contingencies and repairs.

The annual report of the directors of the Manchester Ship Canal Company shows that the net receipts of the whole undertaking last year amounted to £760,641, and miscellaneous receipts brought the total to £810,313. After deducting interest on loan and debenture stock capital, there was a balance available for dividends and reserve of £307,356. There was a decrease of £133,217 in the receipts from Ship Canal tolls, ship dues and miscellaneous receipts, and a decrease of 249,286 tons in the weight of sea-borne traffic on which Ship Canal tolls were paid as compared with the year 1929. The expenditure in the working of the Ship Canal showed a decrease (including the £42,069 mentioned above) of £75,727 as compared with the year 1929. The surplus from the working of dock labour was £16,693 less, and from the working of the company's railways £14,607 less than the previous year. The sea-borne traffic, 6,094,719 tons, was the third largest in the company's history. The "record" was 6,533,780 tons, in 1926, and the next best 6,344,095, in 1929. Barge traffic, 195,906 tons, was the smallest since 1921. The total receipts—£1,395,567—were the smallest since 1923. The net revenue from the working of the Bridgewater Canals amounted to £4,301, as compared with £5,513 in the previous year. The income from Bridgewater railways, rents and miscellaneous receipts, included in the accounts under their appropriate headings, amounted to £4,335, as compared with £5,887 in the previous year. The total Bridgewater revenue from all sources was therefore £8,636, as compared with £11,400 for the year 1929.

New Tidal Harbour Suggested.

It was stated in the Liverpool City Council that careful consideration has been given to the suggestion that a tidal harbour for yachts, etc., should be created on the foreshore between Otterspool and Garston. The matter is one of considerable difficulty, as the levels of the foreshore do not lend themselves to the project except at the cost of very considerable dredging. Moreover, the Mersey Conservancy Board would not agree to such a scheme.

Ship Canal Traffic Down.

The monthly traffic return of the Manchester Ship Canal Company for the month of January shows that revenue amounted to £106,706, or £9,714 less than for January, 1930, and £9,073 less than for January, 1929. Possibly the strike in the cotton trade has had something to do with the reduced receipts, though January figures compare very favourably indeed with the preceding few months.

Notes from the North– continued.

New 100-ft. Dock Bridge.

Sixty thousand pounds is being spent by the Mersey Docks and Harbour Board on installing a new 100-ft. bascule bridge of a new type over the Duke Street passage between the East and West Floats, Birkenhead. To enable the old bridge to be removed, the roadway across the docks at this point was closed to vehicular traffic during February, traffic being diverted by the Four Bridges Road or by the Poulton Penny Bridge, which is toll free during the alterations. A special footbridge has been placed in position for pedestrians. This has been constructed on a barge, so that it can be moved to allow vessels to pass from one float to another. The hydraulic bridge had been in service 70 years, and it is now being cut into sections to facilitate the work of removal. The new bridge has cost £41,790, and the entire contract about £60,000, this including filling up the pit of the old bridge and re-making the roadway on both sides of the passage. The raising and lowering of the rolling bascule bridge is to be electrically controlled. When in a vertical position the tip of the bridge will be 132-ft. from the ground level. The vehicular roadway will be 23-ft. 6-in. in width with two sets of railway lines. On either side will be footpaths 5-ft. wide for pedestrians. One of the features of the bascule bridge will be that it will not be possible to raise it until the gates preventing the passage of vehicles are closed.

Wallasey Sea Defence Wall.

One of the principal items in the approved five years' programme of the Wallasey Corporation is £275,000 for the sea defence wall at New Brighton. The sum of £92,000 is to be spent on the marine lake to be constructed as part of the promenade development scheme.

Dock Board Hopper in Collision.

The Mersey Docks and Harbour Board hopper No. 30 collided with a coasting steamer off Canning Dock, Liverpool, a few days ago. The coaster received severe damage along her port side and canted over a little. The ships then broke apart, the hopper standing by until the Dock Board steamer "Salvor" arrived on the scene. The hopper, which was proceeding down river when the collision occurred, had her bows damaged.

News from the Fish Ports.

A new record in fish traffic at Wyre Docks, Fleetwood, was created during 1930. Over 70,000 tons of fish consignments, 1 per cent. better than the previous year of 1927, were dispatched from the port by the railway. Two-fifths of the total quantity was forwarded to London—whither two special fish trains run daily—for distribution to the South of England and the Continent. The number of catches landed by steam trawlers at Wyre Docks, which are controlled by the London, Midland and Scottish Railway Company, was 5,690, compared with 4,807 in 1927; 265 of the landings were by foreign vessels, 188 being by Belgian trawlers and 39 by German trawlers. Although more Belgian trawlers had visited the port, the total number of foreigners had decreased considerably. Over 100,000 "basses," i.e., small parcels of fish, have been sent away by passenger trains. The coaling of trawlers during the 12 months involved the handling of 380,000 tons of coal, another record figure, showing an improvement of 30,000 tons on the next best year of 1923. The season for the Isle of Man steamers plying between Fleetwood and Douglas was three weeks shorter in duration than in 1929, in consequence of the late Whitsuntide, and whereas the passenger steamers made 192 trips in 1929, only 139 were made in the last 12 months.

During the year 1930, 1,299,561 cwts. of fish—an increase of 100,028 cwts.— were landed and marketed at Fleetwood by British and foreign owned ships. The estimated value of this supply was £1,753,394, an increase of £69,189 from 1929. Of this total, £1,672,953 represents the catches of the British ships and £80,441 of the foreign ships. Fleetwood holds fourth place among the fishing ports of Great Britain. Grimsby leads with catches landed of a value approaching £5,000,000. Hull, with approximately £3,000,000, is second, and Aberdeen, with over £2,000,000, is third. The whole of the fishing industry in Great Britain has suffered from depression, as reflected by the grand total of 1,100,000 tons of fish, an increase of 24,600 tons, brought into Great Britain during the year, which was worth £18,486,000, or £701,200 less than the smaller quantity of 1929. Hake has largely predominated in the catches at Fleetwood, and with 12,528 tons of this variety the port still lays claim to the distinction of premier hake port in the country. Supplies of the larger-sized hake on the fishing grounds to the West of Scotland, worked by the Fleetwood ships, have diminished to an alarming extent, and, with the demand for the fish consistent, the price has soared to a surprising level. At the close of the year the number of steam trawlers owned by Fleetwood firms was 159, an increase of 23 during 1930, and these ships have been valued at over £1,000,000. Eight of the additions were new trawlers which made their maiden trips during the year.

Brunswick Goods Station.

Additional mechanical coaling plant is to be installed by the London & North-Eastern Railway Company at Brunswick Dock Station, Liverpool. The new electrically driven plant will automatically register the amount of coal delivered to each locomotive with the number of the engine, and can fully coal a "Pacific" locomotive of the Flying Scotsman type in six minutes. It has been possible with this apparatus to not only coal locomotives rapidly but to improve the lay-out of engine shed yards considerably.

Personal.

Councillor H. C. Hatton, one of the Mersey Docks and Harbour Board's consulting engineers, owing to ill-health, is resigning from the Hoylake and West Kirby Council. He has represented Central Ward, Hoylake, for 23 years, and has been offered the chairmanship on two occasions, but declined it for professional reasons.

Garston Dock Timber Rates.

Redress of the anomalous railway rates for timber from Liverpool and Birkenhead to the Midlands is given by the L.M.S. from the Garston Dock. The new timber rates are: Birmingham Langley Green Group, Albion Group, Dudley, Great Bridge, Tipton Group, Walsall and Short Heath—Timber List V., 15s. 5d. per ton, station to station, in 2-ton lots; Timber List W., 17s. per ton, station to station, in 2-ton lots.

Darlaston Group, Willenhall, Bilston Group and Wolverhampton—Timber List V., 14s. 11d. per ton, station to station, in 2-ton lots; Timber List W., 16s. 5d. per ton, station to station, in 2-ton lots. These figures represent a reduction of approximately 2s. 9d. per ton in List V. and 2s. 11d. per ton in List W.

New Merseyside Industry.

The 50-h.p. Salmson-engined Swift aeroplane made by the Comper Aircraft Co., Ltd., at Hooton, having a cruising speed of 100 m.p.h. and a climb of 600-ft. per minute, is the first Merseyside manufactured plane to be shipped overseas—to New Zealand.

Liverpool Port Dues.

Liverpool Steamship Owners' Association devote some attention in their annual report to the level of port dues in Liverpool on shipping, in which there has been no reduction since 1922. Compared with other principal ports, Liverpool, states the Association, has failed to keep pace in reduction of cost. It is difficult to make any strict comparison of dues as between port and port, because of the varying concessions in the matter of part cargoes. On the basis of maximum rates, which, generally speaking, are payable where the vessel enters or leaves with a cargo of a weight not less than her net registered tonnage, a comparison can be made, and it shows that Liverpool is to-day too expensive. "It is true," states the report, "that the charges in Liverpool have always been above those of other ports because of the services rendered, but proportionately those charges are higher to-day than pre-war. Liverpool, with an increased level of dues of 72.7 per cent. over pre-war shows a percentage increase over double that of her main rival, London. The position becomes aggravated when it is borne in mind that Liverpool stands almost alone among the big ports in making no material concession on the matter of part cargoes." The weight of goods imported into Liverpool during 1930 showed a decrease of 12 per cent. on that of 1929, whereas the weight of imports into all ports of the United Kingdom showed a drop of only 3 per cent.

New Douglas Bridge.

Douglas Corporation is seeking powers to borrow £4,000 for the purpose of defraying the cost of constructing a new bridge over the Douglas River at Pulrose, and for the purpose of reconstructing the Pulrose Road.

Fleetwood Docks.

Several of the L.M.S. engineers and officials visited Fleetwood recently to discuss plans for the conversion of parts of Fleetwood Harbour into a large dock, with representatives of the Fishing Vessel Owners' Association. The conference took place at the dock superintendent's office at Wyre Dock. The deputation from the Fishing Vessel Owners' Association put forward several suggestions and amendments of the company's proposals, which they urged would improve the port's facilities and assist the development of the fishing industry. One of the most important problems awaiting settlement affects the position of the entrance and approach to the new dock. There are many difficulties to be considered on which expert evidence and advice as to tides and currents, etc., may be required before the plans are finally drafted, and it has been suggested that a working model of the present docks and the proposed extensions should be made for the purpose of making experimental observations.

The Repair of Concrete Piers and Jetties.

PERHAPS one of the most important duties of the Harbour and Docks Engineer is the upkeep of his wharves and crane gantries, because if these are not in good condition the revenue of the port is directly affected. Where the structures are of timber, repairs can frequently be carried out without much inconvenience to traffic, but in the case of concrete structures the engineer, up to quite recently, has been faced with two alternatives:—

(1) Reducing the loading on the structure by lighter crane loads and reduction in storage weight.

(2) Closing the structure to traffic by sections and replacing it in its entirety.

The first alternative means inefficient working, with increased working costs, while the second is always a very costly undertaking, having regard to all contracting factors. However, under modern civil engineering practice a third method is now at the disposal of the port engineer. This consists of the repair of the concrete structure itself by means of Gunite, which can be carried out with very little inconvenience to the ordinary routine work of the port. Gunite is a fine-grade concrete shot into position with the cement gun by compressed air. The force with which the materials are thrown on to the surface under treatment ensures maximum density and strength, with consequent water-tightness, while the mode of application enables the mixing water to be cut down to the minimum, thus providing a perfect bond between the newly-placed Gunite concrete and existing material, whether it be concrete, masonry or steel.

Gunite is usually reinforced with steel mesh to eliminate all temperature cracks, and in various cases, to give the necessary reinforcement where strength is required. Very rapid setting materials can be employed, as the concrete is applied instantly after hydration. This enables tidal or emergency work to be carried out where it would be difficult by other means.

A recent application of this system of repair has been the re-conditioning of the reinforced concrete pier at Shoeburyness, Essex, for the War Office (Fig. 1). This pier, which was built in 1909, is 350-ft. long by 27-ft. wide by 18-ft. high, and carries two 4-ft. 8½-in. railway tracks. The pierhead is splayed out to a width of 100-ft. For the greater part of its length the pile trestles are at 10-ft. centres and there are five piles in each trestle. The outer piles and braces are 12-in. by 12-in. cross section and the inner piles are 14-in. square. Between the trestles the tracks are carried on reinforced concrete tee beams, each 18-in. wide at the flange. These beams carry 3-in. longitudinal timbers to which the flange rails are spiked and transversed closely-spaced sleeper decking.

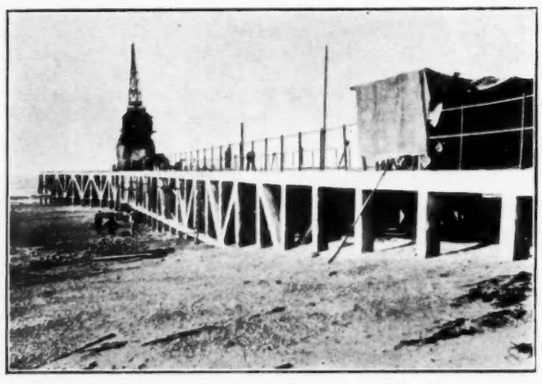


Fig. 1.

An examination of the pier has shown that there has been considerable spalling of the concrete and rusting of the steel reinforcement between high-water mark and a distance of about 7-ft. below this point. This deterioration is attributed to insufficient cover on the reinforcement, which has been the direct cause of moisture reaching the steel and causing it to rust. All the beams and rail bearers were constructed with flat stirrups as shear reinforcement, but in the outer piles round links were used. Deterioration in the outer piles is most severe on the south-east side of the pier, where temperature cracks have appeared as a result of exposure to the sun.

The War Office decided to recondition this pier with reinforced Gunite, and this has now been done. All disintegrated concrete was first removed by pneumatic hammers and the rust sealed off the exposed existing steel. Reinforced Gunite to an average thickness of some 2-in. was then applied over the whole area (Fig. 2), the members being thus increased by some 3-in. in size. The execution of the work was entrusted to the Concrete Proofing Co., Ltd., of 18, Victoria Street, Westminster, S.W.1 (who are specialists in this class of work), and was carried out from July to November, 1930, inclusive, being completed in one month under contract time in spite of the stormy weather which intervened.

Fig. 2.

The process is equally applicable to the rehabilitation of warehouses, and is being used at the present time upon a large warehouse in the Dublin Port and Docks.

A number of sea walls have been repaired in a similar manner, i.e., by shooting 2-in. Gunite, embodying suitable reinforcement on to the face of the wall, and then consolidating the interior by injecting cement grout under pressure. A very interesting description of this type of work is contained in Bulletin B.1 of the Concrete Proofing Co., Ltd., which can be obtained upon request.

Preparing for Busier Times.

Major Eckes, who is chairman of the Liverpool Chamber of Commerce, speaking at the annual dinner of one of the local mercantile associations, referred to the unique facilities given by the railway companies to the port of Liverpool. Along the Dock Line there are 15 goods stations and yards with very fine warehouse accommodation. Each station is well equipped with crane power, and in spite of the depression the railway companies have kept all their equipment and depots in Liverpool in good order ready to deal efficiently with an increase in business. The railway companies are naturally expecting more business, and one thing is clear—if the railway companies can get a substantial increase in the amount of business they are carrying there should be further prospect of reduced rates, as there is ample accommodation for more business at the same overhead charges. Another factor: the haulage charges for wagons to and from the stations made by the Mersey Docks and Harbour Board are now almost at pre-war level. If we regard all that is going on around us day by day we can see how persistently and energetically Liverpool is laying the foundation for a much greater Liverpool, one even more acceptable to the service of the trade of the country and the world.

Port of Southampton Topics.

Improvements in approach to Quays at Southampton.

THE decision of the Southern Railway Company to spend a considerable sum of money in improving the approaches to the Itchen quays at Southampton Docks proves to have been timely in view of the fact that the "Empress of Britain," the Canadian Pacific Company's new steamer, is to make her first appearance at Southampton about a month earlier than had been expected.

The Itchen berths have been used for a considerable period by the Canadian Pacific's other vessels of not very substantial tonnage, but with the advent of the "Empress of Britain, which is of 42,500 tons, it was necessary to begin the work to give a deeper approach to these berths.

Now comes the announcement that the "Empress of Britain" is to make her maiden voyage from Southampton on May 27th and dredging operations will be pushed forward in view of that fact.

The vessel will arrive from her builders, Messrs. John Brown and Co., of Clydebank, at the end of April, and the speeding up of the work of completing her outfit will enable the vessel to make one round voyage before the date originally assigned for her maiden trip.

The overhaul season of the big liners at Southampton is rapidly coming to an end. The "Olympic" returned to the service on February 11th, and the "Majestic" will be back to re-enter the service on March 18th. The "Berengaria," which has been laid up since November, had her sailing date put back a month owing to the great amount of work it was found necessary to do on her. With the "Berengaria" sailing on March 21st, the Cunard Line's express service will revert to the Saturday sailings, leaving the mid-week sailings to the White Star Line.

With the "Homeric" cruising and the "Majestic" laid up, the "Olympic" has been alone in her glory on their White Star express service. As from the voyage of the "Majestic" on March 18th the "big three" of the White Star Line will resume their usual mid-weekly schedule, the "Homeric" rejoining the service on April 1st after her cruise.

February proves a quiet month.

February has been a particularly quiet month so far as the foreign calling vessels are concerned, and in regard to the Holland-America Line there has been only one sailing—that of the "Nieuw Amsterdam." The other vessels have been taken off for cruising purposes.

A similar state of affairs will exist in March, for the same vessel has only one advertised sailing on the New York service, but from early in April the regular weekly service will be re-established, the flagship of the fleet, the "Statendam," being due to sail from Southampton, after cruising, on April 10th.

One of the immediate effects of the very close working arrangement established among Continental Lines was seen in February in regard to the Ozean service to and from Vera Cruz. This service is now operating on a schedule interwoven with the sailings of the North German Lloyd vessels, which have for some time served these parts. For the first time one of the North German Lloyd boats on this service was diverted to Southampton for the purpose of disembarking a few passengers and a substantial quantity of silver.

The Ozean boats have regularly called at Southampton, and there is some conjecture as to whether the new North German Lloyd vessels on the same service will not be seen more regularly at this port in the future.

The "O" boats of the Orient Line will come to Southampton to disembark passengers during the spring. These vessels usually land their passengers by tender at Plymouth, but for some few years past they have come to Southampton in the height of the homeward passenger season from Australia, so that passengers can be disembarked at the quay-side.

New Fruit Trade Service to call at Southampton.

Southampton is to have a new fruit trade service coming here shortly, a welcome addition to the trade of the port. Messrs. Elder and Fyffes, Ltd., the well-known importers of bananas and other fruit, have decided to send some of their vessels to Southampton to discharge their cargoes. It is not known at the moment when the new service will open, but it is expected that the first ship will call very shortly.

The arrangements involve the transfer of the fruit and tomato trade from the Canary Islands. This trade has hitherto been operated through Liverpool, but in the course of a few weeks the steamers will make Southampton their home port.

At least three vessels engaged on the service will be based on Southampton—the "Argual," the "Telde," and the "Orotava," which have maintained a regular trade from the Canary Islands to the Merseyside. The West Indies trade of the company is not affected by this decision, and it will still be carried on from Liverpool.

It is felt that so far as the Canary Islands traffic is concerned there is big scope for development in the South of England, and Southampton has been chosen because of the facilities afforded for rapid transit over a wide area.

Messrs. Elder and Fyffes have had their own office at Southampton for some considerable time. During the season the Canary boats carry tremendous cargoes of fruit, and it is hoped that as a result of sending the vessels to discharge at Southampton, not only will the trade in the southern part of the country be developed, but also that the connections with the Continent will be greatly strengthened.

Timber Trade shows a welcome increase in 1930.

The timber trade of Southampton showed a welcome increase last year. For some years efforts have been made to stimulate the trade, and with increased facilities provided by the Southern Railway Company at the Docks the imports have risen steadily of late.

Timber imports from all sources handled at the Docks in 1930 totalled approximately 31,000 tons, compared with 28,000 tons in the previous year. As usual the chief source of supplies was the Baltic and Northern European countries, and the heavier tonnage handled was entirely attributable to more shipments from this source.

A large cargo of Siberian pine received from the Kara Sea was the first of its kind to be dealt with at the Docks. Imports of Columbian pine or Oregon pine from the North Pacific were not quite so heavy as during 1929, though altogether six more timber cargoes were received in 1930 than during the previous year.

The timber imports handled through the Docks are about one-third of the total coming into the port. The remaining two-thirds go direct to timber importing firms with wharves at the port.

The gradual concentration of the vessels of the East Asiatic Company at Southampton has been one of the features of recent times. Their largest ship in service makes calls here homeward bound from the Pacific, and considerable interest is taken here in the Company's latest ship, the "India," which has recently completed very satisfactory trials. The "India," like the other vessels of the fleet, is a motor ship. She is somewhat similar in design to the "Amerika," which has run very successfully since making her maiden voyage.

As usual in the East Asiatic ships, the "India" has been given a very large cargo space. There is about 21,000 cubic feet of space for the carriage of fruit and other perishable goods, special plant having been installed for cooling and refrigeration. The vessel will carry a limited number of passengers.

Statistics for January.

The January figures for Southampton Docks show that, compared with those for the corresponding period of 1930, there are a number of variations, for, under the twelve headings under which the trade is divided, six show increases and six decreases.

The number of vessels inward fell by 15, from 246 to 231, and the outward total by 16, from 259 to 243. Yet the tonnage totals reveal an increase, so that the average size of the vessels using the port was larger.

The gross tonnage inward mounted from 947,686 to 1,107,773, an advance of 160,087 tons; whilst outward the advance was from 1,078,341 to 1,141,155, an increase of 62,814 tons. The net tonnage returns advanced by 78,944 inward, and 21,118 outward; the respective aggregates being 590,153 as against 511,209 inwards, and 610,815 as compared with 589,697 outward.

The cargo still shows a decline, and though regrettable, it is not exactly unexpected in view of the general trade depression. Inward 40,644 tons were received, as compared with 41,912 tons in January, 1930; whilst 26,755 tons of exports were dealt with, as against 47,747 tons. The decreases were, therefore, 1,268 tons inward, and 10,992 tons outward.

The number of passengers was fewer than in the corresponding month last year. It is seldom indeed that such a decrease is recorded. Inward there was an advance of 941—7,226 against 6,285—but the outward total slipped back from 11,200 in January, 1930, to 9,242 in January of this year.

The trooping figures also fell away, there being an increase of 107 inward, but a decline of 1,238 outward, the totals being inward 3,156, as compared with 3,049, and outward 2,957, as against 4,195.

Notes from Far Eastern Ports.

Ceylon.

Ceylon's Foreign Trade.

THE overseas trade of Ceylon last year was valued at Rs. 594,766,236, imports accounting for Rs. 302,132,857, and exports of Ceylon produce for Rs. 292,633,379. This figure is exclusive of re-exports, which for the year totalled to Rs. 27,982,915. There has been as compared with the previous year (1929) a reduction in trade amounting to Rs. 187,801,420. Imports were reduced by Rs. 100,871,174, and exports by Rs. 86,930,246. Customs revenue likewise reflects the changed conditions with a net decrease of Rs. 3,835,742. Only the four following items have brought in an increased contribution to the Treasury: Kerosene oil, motor spirits and sugar, under the imports, and desiccated coconut and tea under exports. The decrease in revenue from spirts and cordials is significant, dropping from Rs. 5,745,445 in 1929 to Rs. 3,291,896 in the year which closed on December 31st last.

As compared with the months immediately preceding there is an indication of a slight recovery in the import trade in December. The figures for the first and last month of the year were Rs. 34,459,270 and Rs. 22,652,608. The lowest level was reached in November with Rs. 18,875,668. Exports of Ceylon produce in January and December last were Rs. 25,722,693 and Rs. 19,943,226 respectively.

Suit against American Shipping Companies.

Before Mr. V. M. Fernando, First Additional District Judge of Colombo, the case was mentioned on January 28th in which Messrs. The Rubber and Produce Traders (Ceylon), Ltd., are suing The United States Shipping Board, Merchant Fleet Corporation of Washington, and the Roosevelt of New York, for the recovery of a sum of Rs. 3,586.83 as loss and damage suffered by plaintiff by reason of an alleged breach of contract dated March 19th, 1928, by which Messrs. Lionel Edwards, Ltd., acting as agents for the defendants and on behalf of the America India Line, agreed to carry from Colombo to New York for the plaintiffs 50 tons of rubber monthly from April to December, 1928, in consideration of the plaintiffs paying freight at the rate of 25 shillings per ton of rubber.

The trial of this case has been fixed for March 10th next, but on the 28th January, on a joint motion signed by Mr. C. T. de Saram, proctor for the defendants, and Messrs. Julius and Creasy, proctors for the plaintiffs, an application was made that the trial be postponed *sine die* until the final decree of the District Court has been made in case No. 30,616, as the main issue in this case also arose in that case. The Judge allowed the application.

Retirement of Colombo's Chief Assistant Engineer.

A pleasant function took place at the Harbour Engineer's Office on Tuesday, January 20th, when the members of the Harbour Engineer's Department met to bid farewell to Mr. A. H. M. Morgan, Chief Assistant Engineer, who retired after 20 years' service in the Colony. Mr. T. A. Owles, in a speech, enumerated the good work done by Mr. Morgan during the construction of the South-West Breakwater Extension and the other big improvements in the Port, and called upon Mr. Dodds to hand over a group photograph as a memento of his valuable services in the Department. Mr. Dodds, Harbour Engineer, after doing so, dwelt on the sterling qualities of Mr. Morgan, and the able assistance he rendered as Chief Assistant. He also expressed regret at losing one of his best friends, and later unveiled a photograph of Mr. Morgan. Mr. Morgan replied briefly.

Mr. Morgan sailed for England by the O.L. "Otranto," carrying with him the good wishes of all the officers in the Department, who were on the Jetty to see him off.

Water Rate for Shipping.

An application by the Chairman of the Colombo Port Commission for a reduction in the present charge of Rs. 5 per thousand gallons for water supplied to shipping in the Port of Colombo was considered by the Standing Committee on Municipal Works and Finance at its last meeting, and it has been recommended that the Council could not see its way to make any reduction on the existing rate.

The quantity of water supplied to shipping varies between seven and ten million gallons per month, and is no doubt a potential source of contribution to the large revenue derived from the sale of water, which for the current year is estimated at Rs. 1,000,000. For instance, according to the monthly statement of water supplied in October last, shipping consumed 10,257,000 gallons, which at the rate of Rs. 5 per thousand gallons amounted to Rs. 51,285. The quantity of water supplied to shipping per month is, however, subject to fluctuation according to the amount of shipping business the Port attracts, but on the basis of an average monthly consumption of eight and a half million gallons, the annual revenue from water supplied to shipping would approximate to over four and a half lakhs of rupees, at Rs. 5 per thousand gallons.

Colombo Port Commission.

At a meeting of the Colombo Port Commission held on January 19th at the Customs, Colombo, the statement of income and expenditure for the six months ended August 31st, 1930, in connection with the use of cranes in the Colombo Port Commission premises was considered. The Chairman pointed out that the revenue from these charges during the six months under review had amounted to roughly one-quarter of the expenditure; this, however, was due to the fact that the use of cranes had been considerably reduced. It was decided that the charges should be left as they are till trade improves, when the matter would be reconsidered with a view to deciding whether the present charges are sufficient.

The meeting also considered a report from the Harbour Engineer regarding the disposal of the remaining two electric lifts which were obtained for the Baggage Office. It was decided that these two lifts should be installed on the eastern side of the Baggage Office. This side of the office will then be fully equipped for dealing with passengers' baggage.

Letters from the Colonial Secretary were also tabled before the meeting, stating that the Finance Committee of the Ceylon Legislative Council has sanctioned the following supplementary estimates asked for by the Port Commission:—(1) Rs. 490.31 under a new sub-head, " Relief of distress " among workmen caused by the recent Colombo floods. (2) Rs. 1,031.75 under the new sub-head " Working of beats on flood relief duty." (3) Rs. 5,000 under the new sub-head " Extension of Chalmers Quay," and Rs. 11,500 under the sub-head " Road from Kew Road to Lakeside." (4) Rs. 6,746.33 under the sub-head " Personal Emoluments, Bonus to the officers and crew of the tug ' Herculus ' in connection with the salvage of s.s. 'Hoochst' and 'Lauterfels' at Minicoy." (5) Rs. 38,218.54 under sub-heads 7, 10, 17, 19 and 25.

The meeting also considered a letter from Messrs. Narottam and Pereira, Ltd., Colombo, requesting that the lease of the coaling lot south of the Kochchikade Grain Sheds (relinquished by Messrs. Delmege, Reid and Co., Ltd., at the end of December, 1930), which had been granted to Messrs. Narottam and Pereira, Ltd., with effect from January 1st, 1931, be drawn up in the name of their principals, Messrs. Scinda Steam Navigation Co., Ltd. The application was approved.

Madras.

The administration report of the Madras Port Department for the year 1929-30 shows that the total number of passengers that arrived at and sailed from out-ports, except Tuticorin and Vizagapatam, was 638,321 against 590,121 in the previous year. Dhanushkodi continued to record the largest number.

Fifteen thousand seven hundred and eighty-nine vessels, with an aggregate tonnage of 7,750,230, entered the several out-ports (except Tuticorin and Vizagapatam) during the year, against 15,785 vessels with an aggregate tonnage 7,270,757 in the previous year. The total collections of port dues amounted to Rs. 7,08 lakhs against Rs. 6,88 lakhs in the previous year.

The aggregate value of sea-borne trade of the out-ports in the Presidency (except Tuticorin and Vizagapatam) was Rs. 43.16 crores against Rs. 41.97 crores in the previous year.

Forty-three vessels, with an aggregate tonnage of 2,398.55, were registered during the year against 41 vessels aggregating 2,251.80 tons in the previous year. No serious weather disturbance was reported during the year. The total number of wrecks and casualties reported from out-ports (except Tuticorin and Vizagapatam) was 22, against 16 in the previous year.

Cochin Harbour and Large Vessels.

The following proposals have been made by the Sub-Committee appointed by the Port Board, Cochin, in connection with the location and position of berths in the inner harbour:—

Three berths each, from 550-ft. to 650-ft. long, should be provided in the inner harbour, the exact length of the berth and the position of the buoys to be determined when dredging work is completed; No. 5 buoy should be shifted, so as to provide a 700-ft. swinging berth. In this connection the Port Board think it desirable to hold this proposal in abeyance until the dredging of the turning basin is completed and practical experience of turning vessels has been obtained.

Dredging is expected to be finished within the next two or three months, and if it is found undesirable to provide a 700-ft. swinging berth in this position, the Committee proposes that one of the berths should be made 750-ft. long, so as to provide for the largest passenger vessels plying to India.

Notes from Far Eastern Ports—continued.

Tuticorin Port.

During the year 1929-30 four hundred and twelve steamers of 1,186,205 tons entered and 410 steamers of 1,179,786 tons cleared the Port of Tuticorin, while the number and the tonnage of sailing vessels that entered and cleared the port were:—entered, 486 vessels of 29,803 tons, and cleared, 477 vessels of 29,342 tons.

The total tonnage amounted to 1,216,008 tons and 1,209,128 tons respectively, as compared with 1,177,266 tons and 1,176,411 tons in the previous year, which shows an increase of 38,742 tons and 32,717 tons respectively during the year under review. There was an increase of 8 steamers and a decrease of 73 sailing vessels.

The amount of port dues collected during the year was Rs. 1,64,823, an increase of Rs. 14,569 over the amount collected in the previous year. The rate of port dues was not altered during the year.

Fifty-two thousand eight hundred and thirty-four passengers arrived at and 57,816 passengers sailed from the port during the year, being a decrease of 5 per cent. in arrivals and 11 per cent. in sailings over the numbers of the previous year. Almost all these passengers arrived from or proceeded to Colombo, and the decrease is due to the depression of trade in Ceylon, especially in the estates.

Two vessels of 434 tons were registered during the year, and a sum of Rs. 54 was realised as fees. There were eleven changes of Masters and Rs. 22 were collected under this head. The total amount of fees collected under Acts in the port was Rs. 580, as against Rs. 784 collected in the previous year. The difference is due to the fact that fees collected under the Indian Merchant Shipping Act were credited from April 1st, 1929, to "Central Revenues" instead of the Port Fund.

With regard to licensed boats, the Madura Company, Limited, have two steam launches for conveying passengers to the Colombo steamer. There are 93 cargo boats and 101 canoes licensed at the Port. Buoys, moorings and beacons are in good order and condition. An Aga light buoy has been exhibited from September 12th, 1929, to mark the Oraipar shoal and has been found a good guide for cargo boats plying at night.

Port of Tuticorin Fund Receipts and Charges.

The receipts of the Tuticorin Port Fund during the year 1929-30 amounted to Rs. 175,882 and the charges to Rs. 83,847, leaving a cash closing balance of Rs. 120,781, compared with last year's receipts, Rs. 163,896, charges Rs. 172,535 and cash closing balance of Rs. 28,746. The increase is due to the fact that no money has been transferred to the Port Trust, whereas during the previous year one lakh was transferred. In the budget estimates for 1930-31, a sum of Rs. 75,000 of cash balance was transferred to investment.

Siam.

Bangkok's Shipping.

The total number and tonnage of foreign steamers which called at the Port of Bangkok during the month of December, 1930, were 77 and 71,001 respectively.

The total number of passengers was 6,385, of which 6,165 came from Hong Kong, Swatow and Hoihow.

During the month of December, 1930, the British Minesweeper H.M.S. "Petersfield," 260 net tons, visited Bangkok and was moored at the Borneo Co., Ltd.'s wharf. The largest ship in the harbour during the month under review was the Danish m.s. "Lalandia," 3,099 net tons.

Siam's Foreign Trade.

The November imports to Siam from the United States totalled 173,000 dollars, and exports from Siam to the United States for the month were valued at 53,000 dollars. The above-mentioned exports to Siam included the following:—Machinery, 67,000 dollars; electrical equipment, 30,000 dollars; automobiles, 5; auto trucks, 8; fish, 52,000 lbs.; lubricating oil, 1,000 barrels; gasolene, 4,000 barrels; steel, 9,000 dollars; tyres, 500; and 3,000,000 cigarettes.

Canal across Malaya.

A project which, if completed, would eventually reduce Singapore to a third-rate port, is that which is being made for the construction of a canal across the Malaya Peninsula. The plan, known as the Kra Canal, is said to have been feasible from the engineering point of view.

The suggested route from west to east enters the Pakchan River, diverging into a small stream called the Kra, passes over the Kras Pass and then proceeds to the waters of the Chinpohun which empties into the Gulf of Siam.

The Project Opposed.

The "Far Eastern Review" points out that the distance from Ceylon to Hong Kong via the Kra route would be only 2,530 miles, while the distance by the present steamer route is 3,040 miles. It adds that British diplomacy is not likely to tolerate a canal route, as that via Kra, which would decrease the commercial and shipping supremacy of Singapore and suggests that difficulties in financing might arise.

The "Far Eastern Review" goes on:—"The digging of the Kra Canal, which would divert the through sea traffic to the Far East from the Straits to Singapore would so completely undermine the new British Imperial scheme of defence, as to call forth the immediate opposition of the Lords of the Admiralty. If these political considerations are eliminated, the Kra Canal project is reduced to a simple commercial proposition, involving the question of whether or not the undertaking would pay a fair return on the investment.

"There could be no valid reasons advanced at this time for opposing the construction of the Canal, if the Government of Siam has the funds or the credit to finance the contract. The only opposition would come from Singapore, whose maritime importance would dwindle as through Far Eastern traffic is diverted through the new cut. The development of aerial navigation, together with the construction of a canal across the Isthmus of Kra, will eventually reduce Singapore to a third-rate port completely isolated from the main world trade routes. The demand of world trade will in due course force the construction of a canal which lops off two days of ocean traffic between the Far East and Europe and the Far East and markets of India and East Africa."

The route of the proposed canal on its western side runs between the southernmost boundary of Lower Burma and the boundary of Siamese territory in the Malaya Peninsula. On the eastern side of the proposed route the canal would be in Siam.

Port of London Notes.

London's Shipping.

During the week ended January 30th, 802 vessels, representing 865,269 net registered tons, used the Port of London; 445 vessels (672,846 net registered tons) were to and from Colonial and foreign ports and 357 (192,423 net registered tons) were engaged in coastwise traffic.

* * * *

During the week ended February 6th, 1,020 vessels, representing 945,731 net register tons, used the Port of London. 516 vessels (758,247 net register tons) were to and from Colonial and Foreign ports, and 504 (187,484 net register tons) were engaged in coastwise traffic.

* * * *

During the week ended February 13th, 1,030 vessels, representing 984,681 net register tons, used the Port of London. 478 vessels (767,998 net register tons) were to and from Colonial and Foreign ports, and 552 (216,683 net register tons) were engaged in coastwise traffic.

* * * *

During the week ended 20th February, 956 vessels, representing 820,884 net register tons, used the Port of London. 514 vessels (654,334 net register tons) were to and from Colonial and Foreign ports, and 442 (166,550 net register tons) were engaged in coastwise traffic.

Buenos Aires Exhibition.

Of the 900 British firms who are exhibiting at the Buenos Aires Exhibition to be opened this month by H.R.H. the Prince of Wales, over 40 per cent. represent industries whose headquarters are in London and its environs.

London is the only port having a pavilion there and Mr. A. E. Wildey, Public Relations Officer of the Port of London Authority, who has recently returned from a lecturing tour in Canada in the interest of the overseas trade of London, is proceeding to Buenos Aires to represent the Authority.

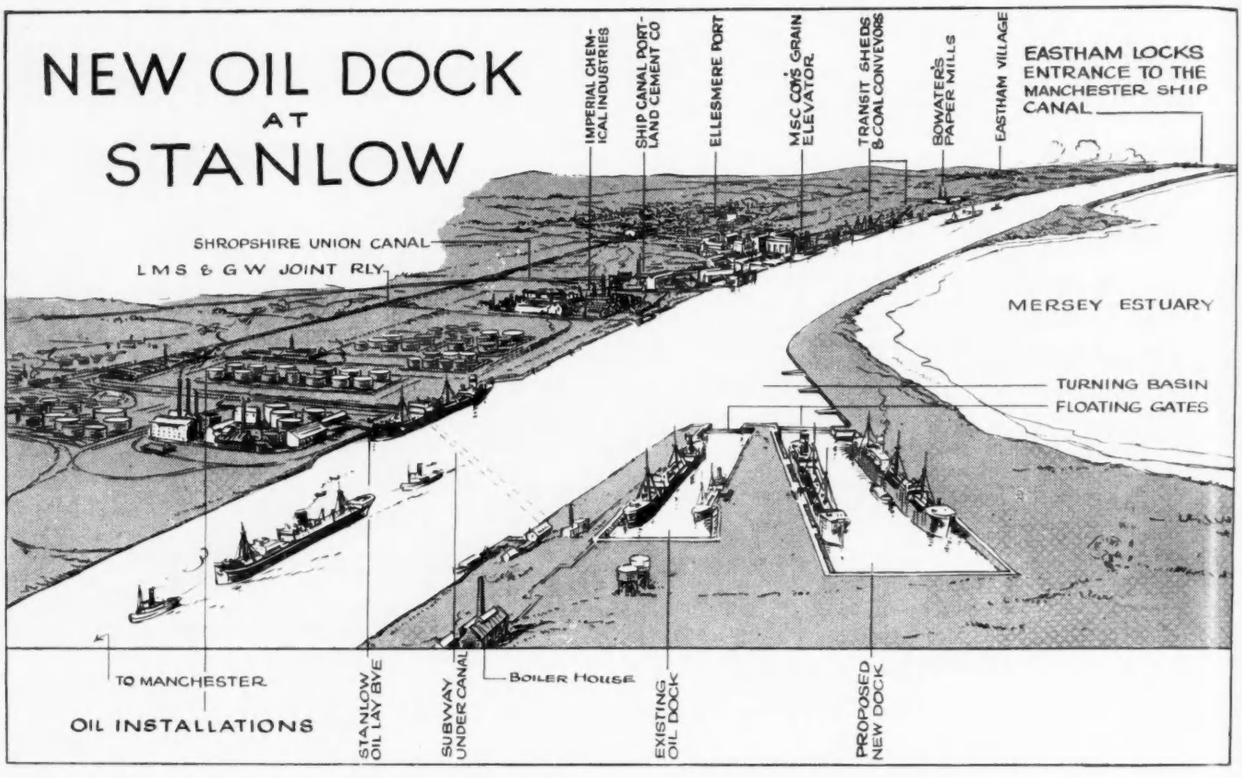
The Institute of Transport.

The Council of the Institute of Transport announces that it has allocated the Ordinary Meeting to be held on April 13th next to a debate upon the Final Report of the Royal Commission on Transport.

The meeting will be held in the Lecture Theatre of the Institution of Electrical Engineers, Victoria Embankment, W.C.2 (adjoining the Savoy Hotel) and will commence at 5.30 p.m.

Applications by non-members of the Institute for tickets of admission to the meeting should be addressed to the Secretary of the Institute of Transport, 15, Savoy Street, London, W.C.2.

Extension of Oil-discharging Facilities at Stanlow.



THE intention of the Ship Canal Company to provide dock extensions at Stanlow was confirmed by the chairman, Mr. Alfred Watkin, at the annual meeting of the company in Manchester on February 23rd.

The chairman said that the question of extensions to cope with growing oil traffic at Stanlow had been the subject of very careful consideration and the conclusion come to had been that the most practical way of providing the necessary facilities would be to construct a new dock equipped with two berths for large vessels.

The new work will increase at least three-fold the volume of petroleum spirit which can be dealt with at Stanlow, and greatly enhance the importance of what is to-day one of the largest centres in the country for the importation and distribution of petroleum spirit.

Stanlow which lies to the eastward of Ellesmere Port, and about 4½ miles from the entrance to the Ship Canal, was chosen by the Canal Company as a suitable locality for the development of the traffic in low flashpoint oils, and a dock was built there in 1922 on an isolated site on the estuary side of the Canal. This dock is 600-ft. long, 100-ft. wide and has a depth of water of 30-ft. Elaborate fire precautions were embodied in its design and arrangement. On entering the dock the vessel is closed in by a floating caisson, a precautionary measure in case of fire or the escape of spirit. The storage tanks belonging to the various oil companies are located on the opposite bank of the Canal, the oil being conveyed in pipes running in a subway beneath the Canal.

As the oil and spirit dealt with is highly inflammable, flashing below 73 deg. F., the greatest precautions are taken throughout the whole plant—dock system and storage arrangements alike. Tankers before discharging, draw their fires and the ship's pumps which are used for discharging purposes are worked by steam from the company's boiler house 100 yards away from the dock.

Flexible pipe connections permit the ship to discharge into the main pipe lines which run beneath the Canal and terminate in a pipe manifold by means of which the oil is directed to the tanks of the particular company for whom it is intended. The tankage capacity at Stanlow exceeds a quarter-of-a-million tons—over 67 million gallons.

The accompanying diagram shows the general arrangement at Stanlow, and both the existing and proposed docks. It will be seen that the new dock will be both wider and longer than the original dock and that its entrance approach, cut obliquely to the line of the Canal, provides a turning basin for vessels at this point.

The new work will cost approximately £240,000 and will take about 2½ years to complete.

The oil traffic at Stanlow has already raised the Port of Manchester to a position second only to London in importance as an oil-importing centre. The contemplated extensions will not only consolidate the position of the port, but will make it far and away the most important oil-importing and distributing centre in the Northern area.

Mersey Tunnel nearing the End.

Rapid progress is being made on the work for the completion of the Mersey Tunnel. Only 845 men are now employed on the whole of the tunnel works, and 510 of these are concentrated on the Liverpool side. At Birkenhead the number of men employed has dwindled to 165 as compared with 220 a month ago and 440 last October. Underground tunnelling on the two entrances has been completed and concreting is in hand at two points. Only 12 per cent. of the concrete roadway remains to be completed. Under the river only 60 men are at work on excavation and on placing the iron segment lining in position but 110 more are busily engaged on the concrete roadway, of which more than half has been completed. The total of 845 men engaged on the whole of the work compares with 930 a month ago, 1,290 in November and 1,445 last October. Of the contract amounts of £3,217,951 over 85 per cent. or £2,752,000 has been expended. To the February meeting of the Joint Tunnel Committee a report was submitted of the experiments which have been made in a section of the tunnel at Birkenhead in the presence of Prof. Haldane and Prof. Douglas Hall, and it was stated that the engineers were satisfied that the problem of dealing with carbon mon-oxide and other impurities in the tunnel air can be satisfactorily solved. It is understood that huge fans, operated electrically, will be installed and that by this means the bad air will be extracted by suction and fresh air driven in through a separate duct.

Improved Grain Handling Facilities at Hull.

An Interesting Automatic Grain Weigher Installation for Overside Work.

A View of the Floating Weighing Plants supplied by W. & T. Avery, Ltd., for use at King George Dock, Hull.

AN interesting contract has been carried out for the London and North-Eastern Railway Co. by Messrs. W. and T. Avery, Ltd., the Weighing Machinists, of Soho Foundry, Birmingham, comprising the supply of two complete floating weighing plants, in each of which is incorporated a 1-ton Avery Patent Weight Printing Automatic Grain Weigher with Residue Weigher, for service in the Port of Hull.

The type of machine supplied is the Avery No. 41 Automatic Weight Printing Grain Weigher with a capacity of 1 tons of wheat per discharge and an hourly rate of 100 tons.

These weighers also handle other grain such as maize, oats, barley, rye and also seeds. The rate and capacity at which the weighers will handle these other grains and seeds depend on their relative specific gravities.

The pontoons, which are named Avery No. 1 and Avery No. 2 respectively, have a superstructure for carrying the weighers. These superstructures are 19-ft. in height to the base of the weigher when in the topmost working position and approximately 30-ft. to the top of the feed hopper.

With the superstructures the weighers are arranged and fitted into an elevated mechanism, so that they are easily raised or lowered to suit working heights, or lowered on to the deck, as required.

Above the actual weighers a top hopper is fixed to receive the grain from a conveyor overside from the ship's hold via an elevator.

An Avery Patent Printing Residue Weigher for ascertaining the amount of grain at the end of a ship's load less than a full weighing is fitted. Each machine is complete with a printing counter registering the number of weighings; thus the total weight of a cargo of grain is printed on a ticket, remaining a permanent record of the grain handled.

Beneath each machine and swivelled from the superstructure, is a telescopic discharge shoot, by means of which the grain is fed into lighters alongside.

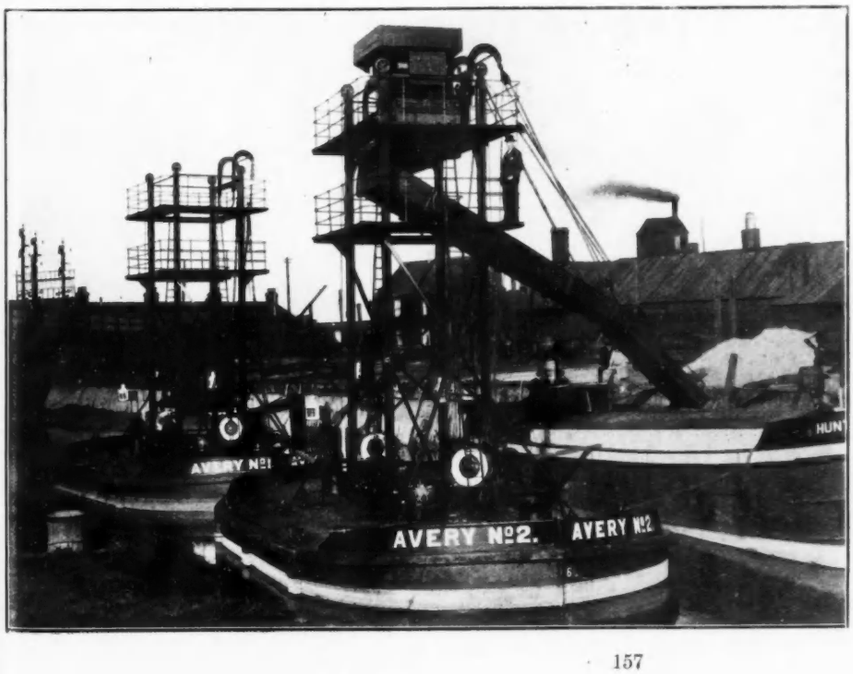
The floating weighers are for service mainly in the King George Dock unloading grain from ocean-going vessels, and will greatly improve the grain handling facilities of the Railway Co., in the port, enabling to some extent the speedier turning around of the ships.

In use, the pontoons are moored alongside the grain ship, and the grain, elevated out of the hold and conveyed overside as described above, is weighed automatically and delivered into the lighters moored on the other side of the pontoons.

It is interesting to note that Messrs. Avery were the contractors for the complete floating units, that is the pontoons, superstructure, machinery and automatic weighers.

The steel pontoons are 50-ft. in length, 25-ft. beam, and a 5-ft. draft, whilst gantries and ladders are provided on the super-structures so that everything connected with the weighers is easily accessible.

On a preliminary test held by the Railway Co., 44 tons 11 cwts. 2 qrs. of grain were weighed through these machines. This weight of grain re-weighed through another machine showed only 1 lb. difference . . . positive testimony to the remarkable accuracy of Avery Patent Automatic Weighers under the hardest working conditions.



Another view of the Floating Weighing Plants in use at Hull, for weighing Grain.

Aden Port Trust.

The returns for the month of December, 1930, of shipping using the port were as follow:—

	No.	Tonnage.
Merchant Vessels over 200 tons ...	125	505,764
,, ,, under 200 tons ...	13	2,040
Government Vessels	7	18,798
Dhows	96	3,907
PERIM.		
Merchant Vessels over 200 tons ...	26	80,199

The total value of imports, excluding Government stores, was Rs.44,65,000, compared with Rs.63,41,000 for December, 1929, and of exports Rs.31,87,000, as compared with Rs.47,06,000.

The total value of both imports and exports together was Rs.76,52,000, as compared with Rs.1,10,47,000 for the corresponding month last year.

Imports during the month were above those for December, 1929, in the case of sugar, piece goods (grey, printed or dyed), twist and yarn, and tobacco (manufactured); and below in the case of coffee, grain, pulse and flour, gums and resins, hardware, hides (raw), seeds, skins (raw), piece goods (white), tobacco (unmanufactured) and treasure (private).

Exports were above those for December, 1929, in the case of coffee, gums and resins, piece goods (printed or dyed), twist and yarn, and tobacco (manufactured); and below in the case of grain, pulse and flour, hardware, hides (raw), seeds, skins (raw), sugar, piece goods (grey and white), tobacco (unmanufactured) and treasure (private).

TRADE OF THE PORT.

Article.	Unit.	Imports.		Exports.	
		Quantity.	Value Rs.	Quantity.	Value Rs.
Coal	Tons	0	0	0	0
Coffee	Cwts.	5,073	1,69,953	6,185	2,86,533
Grain, Pulse and Flour	,,	36,451	2,45,772	16,871	1,73,803
Gums and Resins	,,	6,488	1,13,878	5,658	1,26,143
Hardware	—	0	11,630	0	16,034
Hides, raw	No.	3,472	8,388	6,205	15,559
Oil, Fuel	Tons	28,469	8,54,370	0	0
,, Kerosene	Gls.	19,024	13,568	3,776	2,931
,, Petrol	,,	0	0	1,080	1,391
Salt	Tons	0	0	14,890	1,26,710
Seeds	Cwts.	4,135	50,396	1,154	14,828
Skins, raw	No.	269,960	2,39,315	376,955	3,89,085
Sugar	Cwts.	28,202	1,74,592	9,860	65,717
Textiles—					
Piece Goods, Grey	Yds.	4,747,590	8,04,975	3,000,930	5,31,625
,, ,, White	,,	418,914	1,05,317	230,477	59,349
,, ,, Printed or Dyed ...	,,	755,360	1,68,718	744,590	2,21,380
Twist and Yarn	Lbs.	482,339	2,77,999	450,306	2,72,346
Tobacco, Unmanufactured	,,	113,120	25,946	2,84,592	62,342
,, Manufactured	,,	63,392	70,616	38,304	47,634
Other Articles	No. of Pkges.	66,884	9,15,220	29,248	4,28,653
Treasure, Private	—	0	2,14,191	0	3,44,966
Total ...	—	—	44,64,844	—	31,87,029

The number of merchant vessels over 200 tons that used the port in December, 1930, was 125, as compared with 118 in the corresponding month last year, and the total tonnage was 506,000, as compared with 510,000.

Excluding coal, salt, fuel oil and Military and Naval stores and transhipment cargo, the total tonnage of imports in the month was 9,300, and of exports 5,500, as compared with 9,500 and 5,800 respectively for the corresponding month last year.

Notes of the Month.

The Dock and Harbour Authorities' Directory, 1931.

The above Directory for 1931 has now been published in cloth at 6s. post free, and can be had from the Dock and Harbour Authority's office, 19, Harcourt Street, London, W.1. This year book contains a list of members of the Dock and Harbour Authorities and of their officials of the principal ports throughout the world.

It also gives population figures, depth of water, and port improvements undertaken in 1930.

Pontoon for Grimsby.

Messrs. Richard Dunston, Limited, Shipbuilders, of Thorne, near Doncaster, have received an order from contractors, for a Pontoon, specially designed to withstand heavy work and rough usage, and to carry pile-driving equipment, in connection with the new fish dock now being constructed at Grimsby.

A New Goods Clearing Shed in Hamburg Harbour.

A large new goods clearing shed (Verteilungsschuppen) has just been placed in service on the Holthusen Quay adjoining the Elbe Bridge, which forms the eastern boundary of the Hamburg free-port zone. The main object of the new building is to deal with goods arriving by rail under customs seal for further transport by the port railway to the various quays for shipment. There has been a large increase in recent years in the so-called " Stuckgutverkehr " (piece goods traffic) arriving in sealed trucks at Hamburg from various European countries, the Baltic States, the Balkans, and even Italy and France for shipment abroad, and the old clearing shed, which covered a floor space of 6,500 square metres, has been inadequate to deal with the increased traffic. The new shed covers 15,000 square metres and there is rail accommodation for 90 trucks. Whereas in 1913 the " bonded " goods arriving in the free harbour totalled about 40,000 tons, the volume dealt with in 1930 was nearly 150,000 tons. The new shed is capable of dealing with 300,000 tons per year.

The Junior Institution of Engineers.

On Friday, March 6th, a special meeting will be held at the Science Museum, South Kensington, at 7.30 p.m. Lecture on the Historic Locomotives at the Museum and subsequent inspection of exhibits.

On Friday, March 13th, an Ordinary Meeting will be held at 39, Victoria Street, S.W.1, at 7.30 p.m., paper, " Phenol Formaldehyde moulding compositions; manufacture and use," by Leonard Clegg, member. Slides and exhibits.

On Friday, March 20th, an Informal Meeting will be held at 39, Victoria Street, S.W.1, at 7.30 p.m., " Some token systems of Railway signalling," by W. S. Roberts. Slides.

San Francisco Harbour Improvements.

More than $3,000,000 will be spent in 1931 for waterfront improvements at San Francisco by the new State Board of Harbour Commissioners.

Among the docks already under construction to be completed during the present year are piers 1, 15 and 23. Each structure is costing about $750,000.

In the summer and fall work will be started on two more docks north of the ferry building. Pier 21 will probably be one of these and pier 5 is regarded as the other by persons familiar with the needs of the waterfront. Pier 9 is also slated for early replacement.

All the new piers planned will extend about 800-ft. into the bay and cost about $750,000 each.

Other projects planned for the coming spring are enlargement of the new State cold storage terminal at China Basin and expansion of the Islais Creek grain terminal. Each job will cost about $250,000.

Italian Harbour Affairs.

ACCORDING to the statements made by the Consorzio Autonomo del Porto di Genova, shipping at this harbour during 1930 included 10,550 ships arrived and cleared, representing 21,035,000 net register tons and carrying 7,138,000 tons of goods; that is to say, 6,243,000 tons arrived and 895,000 tons of goods cleared. In addition to this trade it must also be taken into consideration that 512,000 tons of coal and oil were loaded on the ships clearing Genoa as bunkers, and in such case the total trade handled in the port of Genoa amounted to 7,650,000 tons of goods.

If the 1930 figures are compared with those for 1931, a decrease of 430 ships is shown in the arrivals and clearances, 589,000 tons of goods imported and 207,000 tons of goods exported; while the net tonnage has shown an increase of 74,000 tons and the fuel bunkered 24,000 tons. Total shipping has shown a total net decrease of 772,000 tons of goods, which is about 9 per cent. of the total traffic for 1929.

The fact that the tonnage of goods arrived and cleared has shown a decrease while the tonnage of ships has increased clearly shows that the shipowners do not attach less importance to Genoa than before, but that the decline in Genoese shipping is more than anything else the result of general economic crisis, and has no connection with the efficiency of the port of Genoa.

According to the above-mentioned figures the main goods arrived during 1930 at Genoa comprised 2,783,000 tons (267,000 tons less than in 1929); cereals accounted for 1,125,000 tons (54,000 tons more); mineral oils 352,000 tons (22,000 tons more); metals 278,000 tons (141,000 tons less); phosphates 190,000 tons (17,000 tons less); manganese 142,000 tons (11,000 tons more); oil seeds 188,000 tons (88,000 tons less); olive oil 66,000 tons (1,000 tons more); wood pulp 58,000 tons (14,000 tons less); chemical products 57,000 tons (11,000 tons more); wools 42,600 tons (1,000 tons more); skins 25,000 tons (1,000 tons more); frozen meats 40,000 tons (6,000 tons less); sodium nitrate 18,000 tons (27,000 tons less), etc.

On January 1st, 1931, the new tariffs for coal mines, general cargo and industrial workmen with a considerable reduction, carried out in consequence of the instructions of Premier Mussolini, in connection with the decrease of the cost of living, came into effect. Considerable reductions will be carried out also in connection with the tariffs of the unloading, loading and supervision, as well as in the "forfeits" charges for the unloading and transhipment of skins, storage and transhipment of cotton at the Molo Vecchio, unloading of cereals at the silos, and the unloading of baggage from the liners anchored off the Ponte dei Mille.

According to statistics which have been supplied by the Provveditorato del Porto of Venice, it would appear that total trade at Venice in 1930 has included the arrival of 3,871 ships, representing 4,239,368 net register tons carrying 2,525,192 tons, and the clearance of 3,882 ships representing 4,225,284 net register tons carrying 439,741 tons of goods—a total of 7,753 ships, 8,464,652 net register tons, and 2,964,933 tons of goods. If such figures are compared with those of Genoa, it will be noticed that while the imports at Venice represent 40 per cent. of those of Genoa, the exports represent 60 per cent.; and that while the proportion between imports and exports at Genoa is about one-eighth the proportion at Venice is not one-sixth, thus showing that the Adriatic port has no less importance than Genoa as an outlet for Italian exports. In this regard it should be considered that on February 1st, 1931, new connections have been established between Genoa and Mantova, in order to favour the development of trade from the Eastern provinces of Northern Italy and overseas countries via Genoa. The creation of the new service is bound to have a considerable influence in connection with trade which at present takes the Po River route.

In connection with Venice shipping, however, it should be noted that the 1930 figures show only 1.44 per cent. decrease compared with 1929, and the figures have always been higher than those of the pre-war years. It should be noted that such situation has been reached in spite of the fact that the imports of coal have shown a decrease. In this regard, however, it should not be forgotten that while the coal imported on account of the free trade has shown a decrease corresponding to 5 per cent. of the total coal trade, the import of coal for the Government account has shown an increase of 6 per cent.

The following items of trade have shown an increase:—67,000 tons oil; 13,000 tons chemical fertilizers; 4,000 tons paraffin; 4,000 tons oil seeds; 8,000 tons salt and tobacco; 5,000 tons lumber; while the following items have shown a decrease:—104,000 tons coal; 42,000 tons cereals; 21,000 tons of building material; and 5,000 tons of cotton.

According to a decree of the Provveditorato del Porto, unloading charges at Venice have been decreased by 12 per cent. as from January 1st, 1931, including the storage charges and the fees for the use of ferry-boats for the transfer of railway cars from one part of the harbour to another. In order to facilitate the transit trade of cereals, the Provveditorato del Porto has authorised the temporary import of such goods into the Free Zone of the port. Finally, it should be noted that the depth of the water in the lagoon at the entrance to the port of Venice (Lido) has been definitely increased to 11 metres, so that it can be expected that all the large liners on pleasure cruises which are due in the port of Venice will be able to enter into St. Mark's Square.

According to a decree, which has been published by the "Gaszetta Ufficiale," Rome, commencing January 1st, 1931, ships calling at Italian ports (Italian or foreign which is considered equal to the national ships on the basis of the existing treaties) shall pay an anchorage tax of Lire 3.60 per net register ton for ships coming from foreign ports and Lire 1.00 for ships trading between Italian ports. These taxes will be valid for 30 days from the day of call. A forfeit arrangement could be made for the period of 12 years at the fee of Lire 9 or Lire 3 per ton according to the origin of the ships.

In Italian shipping quarters the question of the development of the Danube navigation has been followed with great interest, and particularly the results of the recent international conference which has been held in Poland with the object of improving Danube navigation. According to Italian views the fact that the Reichsbahn Gesellschaft, the Bayrischer Lloyd and other river navigation concerns have succeeded in attracting considerable trade from Belgrade, Budapest, Bratislava, Vienna and Regensburg to Hamburg; this represents a great danger to the transit trade through Trieste and Fiume. As a matter of fact about 50 per cent. of the bulk imports into Hungary and an important part of the Austrian imports are using the Hamburg-Danube route.

In connection with the improvements of facilities in the port of Trieste, it should be noted that in the course of the meetings which have been held at Trieste during the last stay of Admiral Costanzo Ciano, the Italian Minister for Communications, replying to various questions made to him by some of the Trieste shipowners, stated that Trieste shall also have a large dry dock as soon as the situation of national finances permits such an expense. Up till now the Trieste Mercantile Marine only included two ships of a certain size, and these, the "Saturnia" and the "Vulcania," of the Cosulich Line, are ships of 24,000 gross tons each; but when the "Victoria" (15,000 gross tons) is completed, there will be three. In the case of the two Cosulich liners, trading between Italy and the U.S.A., their owners could dry-dock them in New York if the Pola dock was occupied, but the situation becomes much more difficult in the case of the "Victoria," which has no particular facilities on her route except those existing in Pola. The Trieste shipowners have applied for the transfer of the large former Austrian Navy dry dock existing at Pola to Trieste, but it does not appear that the Government has any intention to meet their desires. It was mentioned about two or three years ago that a British concern were considering the idea of building and operating a dry dock in Trieste, but nothing came from this report. It is certain, however, that if there was any truth in it, this would be the best time to undertake the realisation of the project.

At Ancona the tug "Artigas," built to the order of the Montevideo Harbour Board, has been launched. The "Artigas" is one of the six tugs which have been ordered by this Board from Italian shipyards, and it is understood that they will all be fitted with Diesel engines of 1500 h.p. A sister ship of the "Artigas" was launched some months ago. Recently inquiries have been received at Italian shipbuilding yards from South American Republics for the construction of some large dry docks for Naval purposes.

According to an announcement which has just been made, Messrs. Babcock and Wilcox have opened an electric crane factory at Bollate, near Milan, and they have secured several important orders from Italian ports, and they consider extending their activities to other South Mediterranean countries. Inquiries have been received by the Italian industry for the construction of salt loading facilities at some Egyptian ports, while an order for safety doors for warehouses has been received from Greece.

The Port of New York.

Latest Data issued by the Bureau of Commerce.

Foreign Trade at the Port of New York.

IN 1930, a year of depression, the foreign trade of the port of New York, as well as the rest of the United States, dropped in both tonnage and value. Preliminary estimates for the year 1930 place the foreign trade of the port of New York at 21,000,000 long tons and $2,852,560,000. Tonnage fell off 21 per cent. and values 30 per cent. from the high level of 1929. Compared with the former year of extreme depression —1921—however, tonnage was up 2,725,000 tons.

Estimates of the United States Department of Commerce place the decline in total foreign trade of the United States at only slightly less than that of the port of New York, so that the share of the country's commerce passing through this port is approximately the same as last year, or nearly 42 per cent.

VALUE AND TONNAGE OF FOREIGN TRADE AT THE PORT OF NEW YORK.

Year.	Value.	Per cent. U.S.	Long Tons.	Per cent. U.S.
1921	$3,062,521,000	43·8	18,275,000	22·4
1922	2,860,081,000	41·2	26,639,000	27·0
1923	3,316,672,000	41·7	22,953,000	24·7
1924	3,347,701,000	40·8	23,091,000	24·8
1925	3,848,585,000	42·1	23,735,000	25·6
1926	3,887,502,000	42·1	24,060,000	21·6
1927	3,768,893,000	41·6	24,482,000	24·8
1928	3,719,962,000	40.4	26,110,000	25·0
1929	4,059,030,000	42·1	26,703,000	24·8
1930	2,852,560,000*†	41·3	21,000,000**	23.7

*December estimated.
**Six months estimated.
†The above figure does not include $60,000,000 of Canadian grain in transit exported through the Port of New York.

Exports and imports shared alike in the falling off of values, but in accordance with the past trend the tonnage decline was more marked in exports, reflecting the lighter character of the high-class manufactured exports through the port.

Export values alone were lower than in any year since 1922, and were about 27 per cent. off from 1929. Automobiles, parts and accessories are a very important part of the exports through the port of New York, and these items decreased 51 per cent. in the first eight months of 1930 below a similar period in 1929. The automobile companies report a substantial recovery at the close of the year, which promises better prospects for 1931. Shipments to Latin-American countries may be stimulated by the extensive road building programmes which these countries have recently instituted, and also by the beginning of operations in the Ford Motor Company's assembly plant at Weehawken, which will handle Latin - American shipments exclusively.

Exports of industrial machinery, another important item at the port of New York, exceeded the 1929 figures in practically all months of 1930, up to the latest available figures in August. A large part of the industrial machinery is being shipped to Soviet Russia, which is the only country to which the United States exported more in 1930 than in 1929.

VALUE AND TONNAGE OF EXPORT TRADE AT THE PORT OF NEW YORK.

Year.	Value.	Per cent. U.S.	Long Tons.	Per cent. U.S.
1921	$1,730,256,000	38·6	9,052,000	18·6
1922	1,375,396,000	35·9	10,603,000	24·8
1923	1,518,852,000	36 4	11,236,000	22·6
1924	1,657,698,000	36·1	12,007,000	23·0
1925	1,774,436,000	36·2	11,771,000	23·7
1926	1,662,538,000	34 6	10,950,000	16 2
1927	1,726,110,000	35·5	11,251,000	19·8
1928	1,769,905,000	34·5	10,858,000	18·7
1929	1,905,120,000	36·3	9,738,000	17·1
1930	1,383,026,000*	36·0	7,200,000**	15·8

*December estimated.
**Six months estimated.

Imports of the port of New York for 1930 declined about 32 per cent. in value from the previous year, although tonnage was only 19 per cent. less, the difference being due to decline in price levels. World prices are lower than any time since the world war and have decreased fully 15 per cent. during the past year, according to estimates of the National Foreign Trade Council.

VALUE AND TONNAGE OF IMPORT TRADE AT THE PORT OF NEW YORK.

Year.	Value.	Per cent. U.S.	Long Tons.	Per cent. U.S.
1921	$1,332,265,000	53·1	9,223,000	27·8
1922	1,484,685,000	47 7	13,036,000	29·1
1923	1,797,820,000	47·4	11,717,000	26·9
1924	1,690,003,000	46·8	11,084,000	27·1
1925	2,074,149,000	49·1	11,964,000	27·8
1926	2,224,964,000	50·2	13,110,000	30·0
1927	2,042,783,000	48·8	13,231,000	31·5
1928	1,950,057,000	47·7	15,252,000	32·8
1929	2,153,910,000	48·9	16,965,000	33·6
1930	1,469,534,000	48 0	13,800,000	32·1

Overseas Travel Greater in 1930.

More Americans travelled abroad in 1930 via the port of New York than ever before. For twelve months up to the end of November, 1930, a total of 673,445 United States citizens passed in or out of Sandy Hook, an increase of 27,553 over the same period ending November, 1929. Also during the same period, 34,296 more non-emigrant aliens departed than in the previous year.

These increased movements more than offset the drop in the number of inbound aliens bound for these shores, and which has been brought about by a downward revision in national quotas and stricter supervision of admittances.

	12 months ending November, 1930	12 months ending November, 1929
INBOUND:		
Aliens, Immigrant ...	126,289	155,298
,, Non-Immigrant	137,241	145,247
U.S. Citizens	332,093	327,635
Total ...	595,623	628,180
OUTBOUND:		
Aliens, Emigrant ...	33,895	37,082
Non-Emigrant	168,555	134,259
U.S. Citizens	341,352	318,257
Total ...	543,802	489,578
Total for 12 months ending November	1,139,425	1,117,758

Vessel Movements in Foreign Trade.

Vessels entered and cleared in foreign trade at the port of New York during the calendar year 1930 were less than the previous year but greater in net registered tonnage.

	1930		1929	
	No. of Vessels.	Vessel Tonnage.	No. of Vessels.	Vessel Tonnage.
Entrances ...	6,662	31,151,383	6,928	30,490,353
Clearances ...	6,779	31,347,263	7,035	30,806,824

Both in the entrances and clearances the number of vessels decreased 4 per cent. as compared with the previous year, while the tonnages increased 2 per cent.

In 1930, 37.4 per cent. of the number of vessels entered and 32.7 per cent. of the total net tonnage was of American registry, while 27.4 per cent. of the number of vessels and 33.2 per cent. of the net tonnage was of British registry.

Vessels in foreign trade at the port of New York outnumbered by 25 per cent. the total of those entering and clearing at the ports of Boston, Philadelphia and Baltimore combined.

	1930	
	Entered.	Cleared.
Boston	1,652	1,689
Philadelphia ...	2,073	1,911
Baltimore	1,715	1,749
Total	5,440	5,349
New York	6,662	6,779

Steamship Services and Sailings.

At the close of 1930 the records show a total of 102 steamship lines operating 159 foreign services calling for a minimum schedule of 405 sailings per month. During the last few months there has been a tendency to make further temporary cuts in the usual scheduled sailings to the United Kingdom and South America. These services are as follows:—

	No. of Lines.	Services.	Scheduled Sailings Per Month.
United Kingdom	12	16	52
Baltic	5	5	20
Hamburg-Bremen	4	4	22
Rotterdam-Antwerp	6	7	23
French Atlantic	2	4	14
Spain-Portugal	3	4	8
Italy, West Coast and French Mediterranean ...	6	6	13
Adriatic, Levant, Aegean, Black Sea, North Africa	5	9	15
Indian Red Sea	5	5	6
South and East Africa	7	7	8
West Africa and Azores	2	2	4
Caribbean-Mexican	20	33	113
Brazil (except Rio de Janeiro)	8	9	12
Rio de Janeiro-River Plate	12	12	21
South America, West Coast, Panama	8	11	16
Australasia	4	5	10
China, Japan, Phillipines	14	14	20
Dutch East Indies, Straits Settlements, Honolulu	3	3	4
Canada Atlantic	3	3	21

In the inter-coastal service there are 13 lines operating from the port of New York with a schedule calling for 29 sailings per month.

(*Continued overleaf*).

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The Port of New York—continued.

Coastal service is maintained to the principal Gulf and South Atlantic ports by 8 lines operating 14 services with a minimum schedule of 100 sailings a month. In addition to this there are 15 lines operating 17 services out of the port of New York via Long Island Sound to New England, with 10 to 16 sailings daily.

In spite of the depression which prevailed throughout the year, the number of steamship sailings in all services from the port of New York in 1930 reached a total of 18,765, only 152 less than the previous year, and represents a loss of less than 1 per cent.

Domestic sailings actually gained over 1929, chiefly in coastal tankers and coal carriers. Overseas sailings declined, however, in every foreign trade route except those to North European ports and India. The greatest cuts were in the African, South American, Australian and Caribbean-Mexico services.

The peak day of the year was Saturday, August 9th, with a total of 104 sailings. These were divided between 58 departures to foreign ports and 46 in domestic service.

New Pier Construction.

Progress in the erection of new pier facilities has continued throughout the year. Construction of 4,976 lineal feet of deep water berthage was completed in 1930. An additional 28,360 lineal feet is planned for the immediate future. Location and details of these facilities is given in the following table:—

Project.	Constructed by.	Dimensions.	Progress.
Pier 3, North River	N.Y. Dock Dept. ...	720 by 140	Complete
Pier E, Jersey City	Pennsylvania R.R.	868 by 175	Complete
Pier F, Jersey City	Pennsylvania R.R.	900 by 175	Complete
		2,488 by 2 = 4,976	
Pier D, Weehawken	Erie Railroad ...	832 by 101	To be completed February, 1931
Pier 8, Erie, Jersey City	Erie Railroad ...	1,050 by 70	Started Nov. 15th, 1930
Pier 34, North River	N.Y. Dock Dept. ...	1,024 by 160	$765,000 prelim. appropriation.
Pier 45, North River	N.Y. Dock Dept. ...	890 by 100	$450,000 prelim. appropriation.
Ft. W. 48th Street	N.Y. Dock Dept. ...	1,000 by 125	$358,000 prelim. appropriation.
Ft. W. 49th Street	,, ,, ...	1,000 by 125	
Ft. W. 50th Street	,, ,, ...	1,000 by 125	
Ft. W. 51st Street	,, ,, ...	1,000 by 125	
Pier 32, North River	N.Y. Dock Dept. ...	1,000 by 125	Not started
Pier 9, East River	N.Y. Dock Dept. ...	650 by 140	Not started
4 Piers, Little Basin Jersey City	Port Authority and Jersey City	(3) 1,025/1,100 by 150 (1) 980 by 90	Preliminary Survey.

The dimensions shown are tentative and may be slightly changed. The recent approval of the War Department to a modification of the pier-head lines on both sides of the Hudson River will give impetus to this construction.

Channel Improvements.

During the Government fiscal year ended June 30th, 1930, United States engineers expended $3,647,267 in the port of New York District; $2,801,952 for improving and $845,315 for maintaining channels. The amount spent for improvement in 1930 was slightly less than the $3,501,969 average of the past ten years.

Because of the immense tonnage using the waters of New York Harbour, estimated at 137,231,861 short tons in 1930, the cost of this Federal expenditure is very low, amounting to only 2½ cents per ton, figuring all maintenance costs plus 4 per cent. interest on the total investment to date.

There are 21 authorised projects in the Port District now in various stages of completion. The Staten Island Sound project, which provides a channel 30-ft. deep and 400-ft. wide from deep water in lower New York Bay through Raritan Bay, the Arthur Kill and the Kill van Kull to upper New York Bay is more than 80 per cent. complete, and under present contracts for dredging and rock removal will be entirely complete early in 1932.

The expenditure for improvements during the fiscal year ended July, 1930, were distributed over seven projects. Contemplated expenditures for the fiscal year ending June, 1931, will cover 11 projects; 5 of these were originally scheduled to begin after July 1st, 1931, but allotments by the Secretary of War from the Emergency Appropriation Act passed by Congress on December 20th, 1930, will make available $694,000 for immediate expenditure. This will make possible an immediate start on 5 projects which would otherwise have been postponed until next fall: (1) The widening of the 40-ft. Bay Ridge Channel by 550-ft., (2) the widening of the southerly section of the Anchorage Channel in the Upper Bay to 2,000-ft., (3) the widening and deepening of Newton Creek, (4) the widening and deepening of the Raritan Channel from Great Beds Light to New Brunswick, (5) the widening and deepening of South River, N.J.

The expenditures for channel improvements next year are compared to the expenditure for last year as follows:—

	Project.	1930 Amounts expended.	1931 Estimated amount to be expended for improvements.
1.	East River, N.Y.	$1,480,195	$1,711,471
2.	N.Y. and N.J. Channels (Staten Island Sound)	548,016	1,684,820
3.	Newark Bay, Hackensack and Passaic Rivers	469,883	902,558
4.	Jamaica Bay, New York	138,078	521,309
5.	Harlem River, New York	150,082	107,050
6.	Newtown Creek, New York	13,043	244,305
7.	Eastchester Creek, New York	2,655	—
8.	Raritan River, New Jersey	—	344,000
9.	Westchester Creek, New York ...	—	205,000
10.	N.Y. Harbour Anchorage Channel ...	—	100,000
11.	Bay Ridge Channel, New York ...	—	50,000
12.	South River, New Jersey	—	90,000
		$2,801,952	$5,960,513

Bombay Port Trust.

At a meeting of the Trustees of the Port of Bombay held on 27th January, 1931, the following were the main items of business disposed of:—

The audited accounts for the half-year ending 30th September, 1930, were approved for submission to Government and publication in the "Bombay Government Gazette."

Subject to the sanction of Government a grant of Rs. 2,500 was sanctioned to the J.J. Hospital Nursing Association in respect of the year 1930-31.

The following estimates of expenditure were sanctioned:—

Rs. 11,000 for re-conditioning the dipper dredger "Walrus."

Rs. 5,000 for filling and surfacing the site of the old Magazine Hill Quarry, which has recently been leased to the Havero Trading Co., Ltd., for the erection of a godown for storage of nitro-lacquers.

The joint report submitted by the Agents of the G.I.P. and B.B. and C.I. Railways and the Chairman of the Bombay Port Trust on certain recommendations drawn up by Mr. C. W. Lloyd Jones, C.I.E., relating to the terminal goods traffic at Bombay, having been accepted by the Railway Board, the Trustees approved the constitution of two Committees comprising the officers of the Commercial and Transportation Departments of the three Railways to give effect to the proposals. The functions of these Committees will be to ensure closer co-operation between the three Administrations with a view to co-ordinating and improving the movement of traffic and, in cases in which larger issues may be involved, to put forward their recommendations for consideration by the heads of the three Administrations.

On the recommendation of the Finance and General Committee, certain proposals for re-organising the Docks and Hamallage Branches were approved. The proposals, while effecting better working and more flexibility in the staff arrangements, involve no additional expense.

The Board also approved a draft Tripartite Agreement, to be entered into with the G.I.P. and B.B. and C.I. Railways, supplemental to the Agreement in force since 1911 governing the payment of terminal allowances by the two Main Line Railways to the Port Trust Railway for terminal services rendered by the latter. The new agreement introduces a sliding scale of reduced rates for every 10 million maunds, after the first 50 million, of foreign traffic handled by the Port Trust on behalf of the others.

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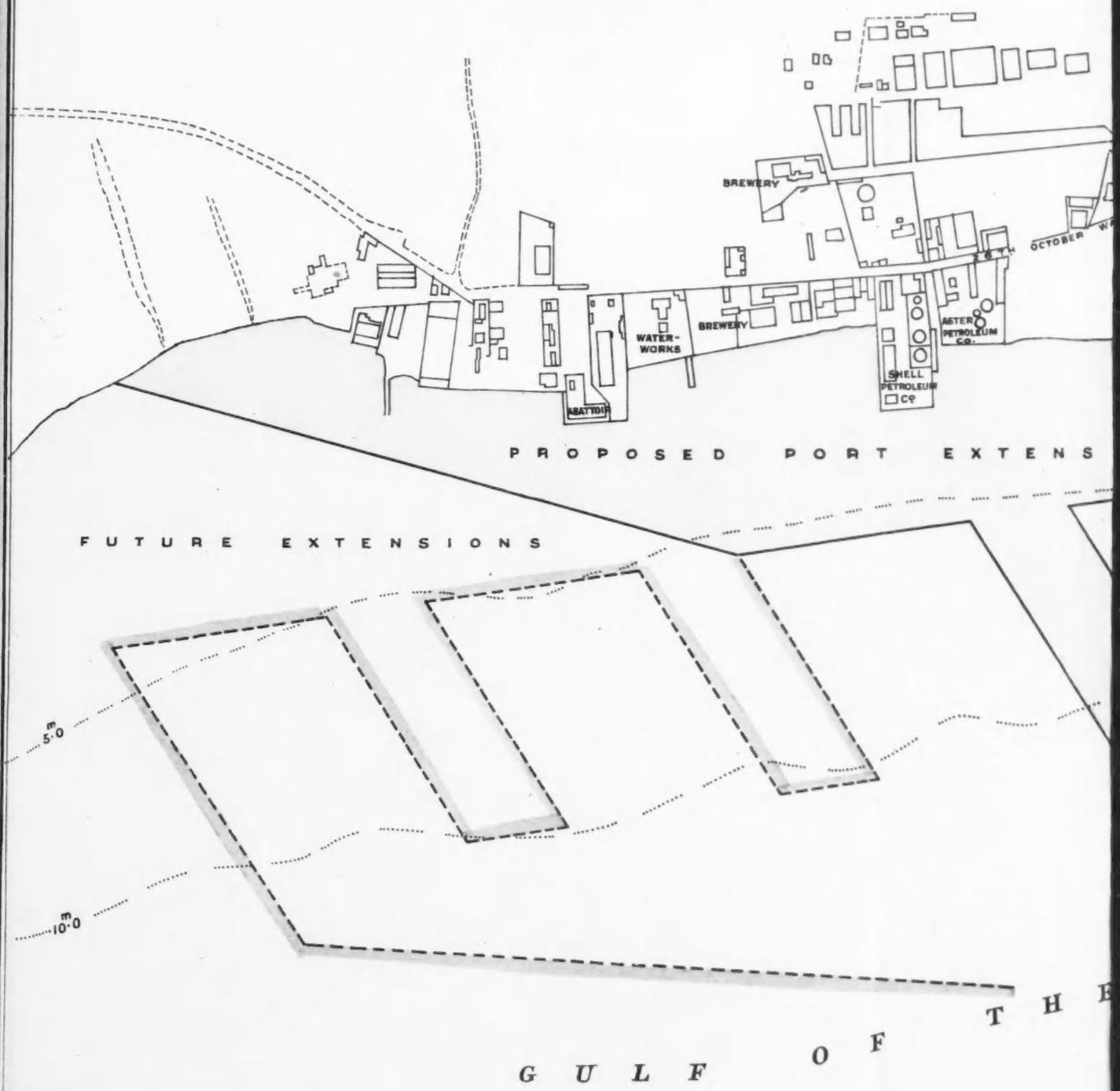

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